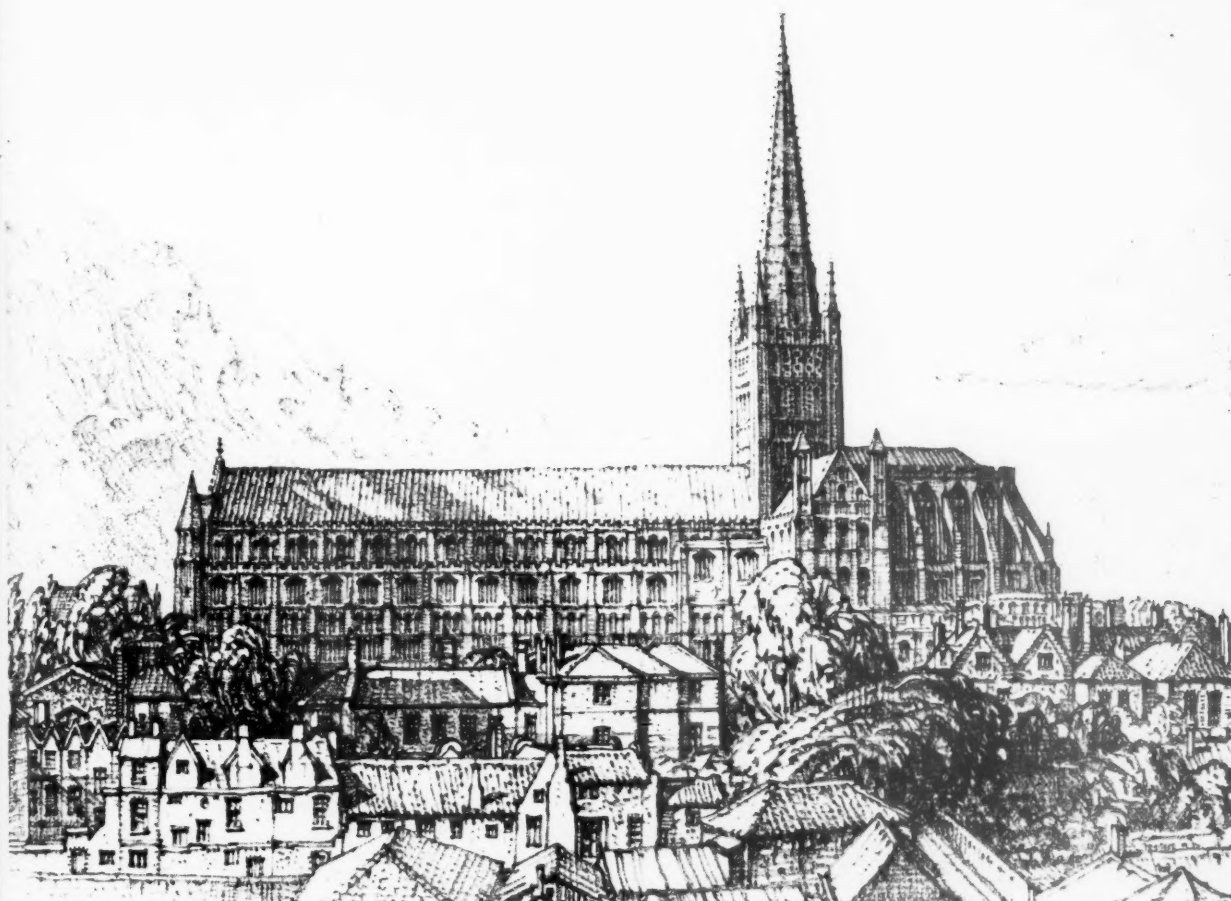


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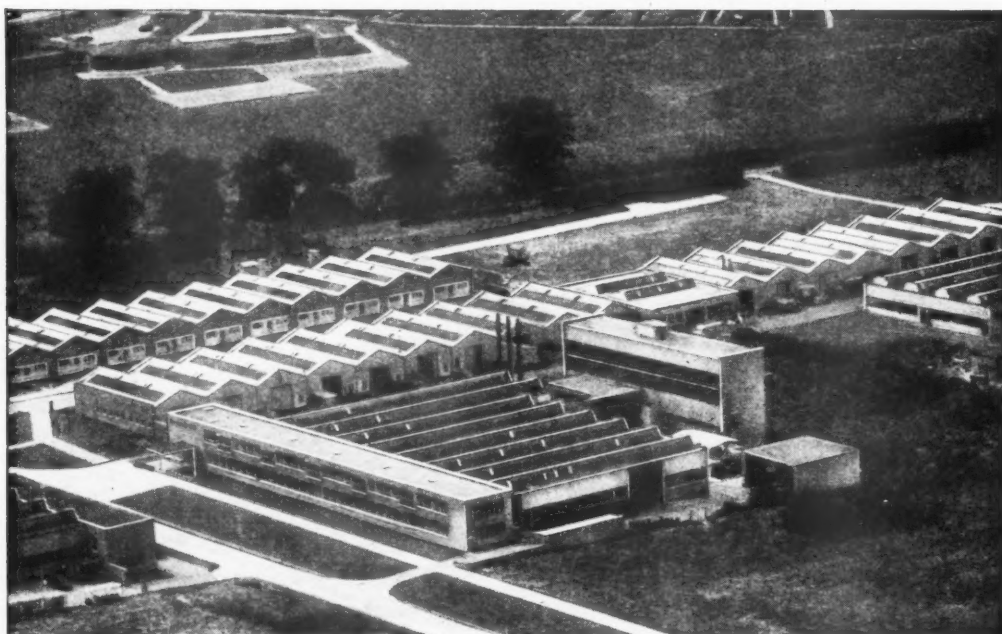
# THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

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Norwich Cathedral. From a drawing by Sydney R. Jones

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# THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

THIRD SERIES VOLUME SIXTY-THREE NUMBER EIGHT TWO SHILLINGS AND SIXPENCE  
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JUNE 1956

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## The Queen Mother at the R.I.B.A.

The Royal Institute was honoured on 24 May with a visit by Queen Elizabeth the Queen Mother. Her Majesty had been laying the foundation stone of the new building in Mansfield Street of the Royal College of Midwives, and after the ceremony attended a tea party given by the College, for which the R.I.B.A. provided accommodation. The Queen Mother was received by the President R.I.B.A., the President of the Royal College of Midwives, Miss Dean, Mrs. Aslin and the Secretary R.I.B.A.

## The R.A.I.C. and the Secretary R.I.B.A.

The Secretary R.I.B.A., Mr. C. D. Spragg, C.B.E., has been elected one of the first Honorary Corresponding Members of the Royal Architectural Institute of Canada at the Annual Meeting of the R.A.I.C. held in Banff, Alberta.

This is a new class of membership made possible by a recent amendment by the Canadian Parliament to the Act of Incorporation by which architects and others residing outside Canada, who are interested in architecture or the architectural profession or in any of the arts and sciences relating to architecture, become eligible for election as Honorary Corresponding Members for life.

## Presentations to Eric L. Bird

In the March issue of the JOURNAL it was announced that Eric L. Bird was relinquishing his position as Editor at the beginning of June, after occupying that position for some ten years. During his editorship he created the present character of the JOURNAL, and among the innovations he made were the alterations in the style and format, the introduction of the Times Roman type face in which it is now set, and the use of illustrations and colour on the front cover.

His conduct of the JOURNAL has received the commendations of the great majority of its readers, and as some recognition of his work the Institute has presented him with a radiogram and records and his friends on the staff have given him a travelling case and clock together with a farewell address containing the signatures of all the contributors, as a testimony to the esteem—the affectionate esteem—in which they hold him.

In taking up his position as Technical Education Officer at the Building Centre Eric L. Bird carries with him the warmest good wishes of his many friends.

## Birthday Honours List

*Baronets.* Alderman Cuthbert Lowell Ackroyd, Lord Mayor of London. Lieut.-Colonel Sir Thomas Moore, C.B.E., M.P. [*Hon.A.*].

*Knights Bachelor.* Brigadier Edward Beddington, C.M.G., D.S.O., M.C., Chairman, Herts County Council. Professor William Coldstream, Slade Professor of Fine Art, London University. Walter Charles Norton, President, Law Society. Frederic J. Osborn, Chairman, Executive Committee, Town and Country Planning Association. Allan S. Quartermaine, C.B.E., M.C., Chairman, Building Divisional Council, B.S.I.

*K.C.B.* Edward Muir, Permanent Secretary, Ministry of Works.

*C.B.E.* P. L. Leigh-Breese. F. C. Brown [*F.*], Ministry of Housing and Local Government. Harold Conolly [*F.*]. Professor R. Y. Goodden [*A.*]. Christopher Hussey [*Hon.A.*]. B. D. Storey, Town Clerk, Norwich.

*K.C.V.O.* Professor Anthony Blunt.

*O.B.E.* Alderman Arthur Ashton [*Retd. F.*]. Hope Bagenal, D.C.M. [*F.*]. W. J. Brown [*F.*], Principal Regional Architect, S.W. Region, Ministry of Housing and Local Government. A. W. Davson, Past Chairman, Quantity Surveyors' Committee, R.I.C.S. Gilbert Ledward, R.A. T. H. Longstaff [*F.*], County Surveyor and Planning Officer, Huntingdonshire. W. H. Martin [*L.*], Technical Adviser, London, N.E. and E. Regions, Central Land Board and War Damage Commission. J. C. Pritchard, Director and Secretary, Furniture Development Council. C. J. Saltmarshe, Editor, LONDON CALLING, B.B.C.

## St. Paul's Precinct

The Court of Common Council of the City Corporation had before it at its meeting of 14 June the report of its Improvements and Town Planning Committee on Sir William Holford's proposals for the planning and architectural treatment of St. Paul's Precinct Area.

The report says that the Committee have no hesitation in advising the Honourable Court that subject to further considerations and the financial implications, it is their 'considered opinion' that the proposals should be approved in general principle as a satisfactory basis for the ultimate creation 'of a worthy setting' for the Cathedral, in so far as may be necessary at this stage for the purpose of amending the Development Plan.

### Architects' Sign Boards

The standardised design for architects' sign boards is evidently proving very popular with members. The Lettering Centre report that since the notice appeared in the JOURNAL and technical Press they have been overwhelmed with orders. Members may in consequence have to wait a little longer for their boards than was originally anticipated, but they can rest assured that each board will be carefully prepared and the layout for each architect's name and address individually designed.

The price of the boards has been regarded as rather high by some members and it should perhaps be pointed out that the actual cost of the plastic liner forms only a very small proportion of the total cost, which includes four separate stove enamelling processes, screen printing the badge and the word 'architect', and sign-writing in standard lettering the architect's name and address, for which an individual layout is prepared for approval by the architect in each case. The price also includes free transport and packing to any part of the country. It is reckoned that the boards will have an extremely long life and can therefore be used on one job after another.

The Council of the Royal Institute attach great importance to the repetitive value of the standardised board and consider that such a board as has been prepared, combining good typography and layout design with high standards of workmanship and finish, cannot fail to reflect credit on the profession. It is for this reason that they have authorised the use of the R.I.B.A. badge on sign boards only as part of the particular standard design and it would not be in order for members to use the badge on an altered form of sign board.

While this does not preclude members from designing a completely different board without the R.I.B.A. badge if they so wish the Council hope that as many members as possible will use the standard board as they are convinced that a board of this type will add to the prestige of the profession.

### Provision of Explanatory Drawings with Bills of Quantities at the time of Tendering

Following representations made by the Joint Consultative Committee of Architects, Quantity Surveyors and Builders, the Practice Committee submitted the following recommendation to the Council:

'Having considered the issue very fully, the Practice Committee recommend that the R.I.B.A. should approve the principle of issuing explanatory drawings with the tender documents and bills of quantities, but in so doing to emphasise that these drawings are solely for the purpose of explaining the nature of the scheme and do not form part of the contract in any sense, and that in any event the procedure would not be mandatory.'

This recommendation was approved by the Council at their meeting on 1 May.

There is a reference to the Committee's report in Practice Notes (p. 355).

### R.I.B.A. Representative on B.S.I. Committee

The R.I.B.A. has been invited to appoint a representative to a newly formed Technical Committee of the B.S.I., CEB/12 Water for Making Concrete. In the letter of invitation the Institution say that 'while for the majority of contracts water is available from public supplies and therefore satisfactory, there are a number of contracts in this country, and more particularly overseas, where public water supplies are not available and it therefore becomes necessary to specify and test the quality of the water to be used for making concrete.'

The British Standards Co-ordinating Committee of the Royal Institute are anxious to find a suitable representative and would be glad if any member who would like to be considered as R.I.B.A. representative would communicate with the Secretary R.I.B.A. as soon as possible.

### London Architecture Bronze Medal Award

The Medal for the year ended 31 December 1955 has been awarded to Mr. Frederick Gibberd, C.B.E. [F] for the Central Terminal Area, London Airport.

### Building Advisory Service

BAS as it is now known was set up in 1954 by the National Federation of Building Trades Employers at the suggestion of the Ministry of Works as a necessary step towards increasing productivity and lowering costs, and is a self-supporting but non-profit-making service run by a committee of management under the chairmanship of Mr. G. W. Grosvenor, C.B.E.

During the last year over 40 firms have paid for advice from the service and after receiving favourable reports on its value from a number of building firms, the N.F.B.T.E. is now putting out posters and leaflets to spread knowledge of the service throughout the industry.

BAS will undertake investigations connected with any of the following: Work Study, Incentives, Materials Handling, Mechanisation, Programming, Site Organisation, Costing, Office Organisation and Personnel Administration, for fees on a scale which covers the cost of running the service.

Investigations already carried out indicate the need to give early attention to the problems of agents and general foremen, often recruited from among the best craftsmen, irrespective of their managerial capacity and without specialised training. BAS is endeavouring to promote an appreciation of the value of work study for craft jobs and materials handling. One London firm claims by application of work study techniques to have reduced the team required to lay a concrete floor from 12 men to four. BAS will try to determine the standard teams and basic standards of output for all types of mechanical equipment.

### Barbican Redevelopment

In January of this year Messrs. Chamberlin, Powell & Bon, the architects for the Golden Lane Scheme, were appointed by the Corporation of London to prepare a report for the Court of Common Council on the possibility of a residential development within the Barbican area. This report in the form of a well produced and illustrated booklet having been examined by various interested committees is now under consideration by the Court of Common Council.

The proposals are for the creation of a self-contained residential neighbourhood with its own amenities and services which would also become a cultural centre for the city.

The architects interpreted their terms of reference to mean the satisfying of three main requirements:

1. Residential accommodation for about 6,000 to 7,000 people with a large number of garages.
2. New buildings for the City of London School, the City of London School for Girls and the Guildhall School of Music and Drama.
3. A large area of open space.

An exhibition, including a fine model, was opened at Guildhall on 25 May and has been widely illustrated.

The conception is briefly of a garden containing the schools, surrounded by terraces of flats, with an adjacent group of three 30-storey blocks of flats echoing the high commercial buildings which form part of the proposals put forward by Dr. J. L. Martin [F] and Mr. Anthony Mealand [F] in the scheme that is being considered by the Minister of Housing and Local Government.

### Journal Change of Address

As from 2 July the address of the JOURNAL and the A.B.S. will be 78 Wimpole Street, W.1 (Editorial WELbeck 1500, Advertising 0766, A.B.S. 1526).



## British Architects' Conference 1956

There were no umbrellas or overcoats at Norwich. The weather was beatific the whole time, and so the one factor outside the control of even the best of Committees consented to make this year's Conference an outstanding success in every way.

The Conference got off to a good start in the Assembly House, restored with such scholarship and taste by Mr. Rowland Pierce that the sparkling formality of Thomas Ivory's 18th-century rooms formed the perfect setting for the enjoyment of the Norfolk and Norwich Association's hospitality. Guests were received by the President of the Association, Mr. Humphrey Boardman and Mrs. Boardman, and the President R.I.B.A. and Mrs. Aslin.

Thursday morning found the Conference in their seats in the less glamorous atmosphere of the Stuart Hall where the three main speakers, Mr. Jefferiss Mathews, Dr. J. C. Weston and Dr. J. L. Martin, set the tone for a serious and valuable discussion, quite up to the standard expected after the two previous conferences at Harrogate and Torquay. Some speakers were audible without resort to the microphone, while others were inaudible with it, but either way the substance of the contributions held the attention of the Conference and the morning was extremely stimulating.

After lunch we made our way in sunshine to the Bishop's Palace garden. The garden-party in fact really looked like one. There was music from the band of the Royal Norfolk Regiment, and it was warm enough for the atmosphere in the tea marquee to reach summer heat. At least three past or present Norwich City Architects were to be seen under the trees.

Our hosts, Dr. Herbert and the Hon. Mrs. Herbert, charmed everyone, and the Bishop, who is also Abbot of St. Benet's, took a party round his house which is Norman in part complete with underground dungeon. Dr. Herbert's commentary was both lively and informed. At five o'clock it was time for Evensong in the Cathedral, at which the President, Mr. C. H. Aslin, read the Second Lesson. The Dean gave an address.

In the evening came the Civic Reception in the romantic and instructive setting of the Castle Museum. Guests were received by the Lord Mayor of Norwich, Councillor Arthur South, and the Lady Mayoress, the President and Mrs. Aslin, and the President of the Norfolk and Norwich Association and Mrs. Boardman, in the lofty keep of the castle. The City Regalia carried by liveried bearers added lustre to the scene, and glasses of the special 'Norwich cup' served at all the city's civic functions were soon in everyone's hand, with marked result on the conversation. Gradually we dispersed through the galleries to dance or admire the Cromes and Cotmans, the stuffed bitterns and bearded tits in the showcases and especially the splendid photographic exhibition of East Anglian buildings.

For those who did not care for dancing—or had no one with whom to dance!—there was a film show. The film seen was 'The Proud City', made for Norwich Week last year. This was not, obviously, specifically made for architects, but who could complain of this, with the lovely city itself spread around us? In fact, we spent forty very enjoyable minutes admiring Norwich's considerable civic achievements in the fields of health services, transport, education, etc.

Afterwards we strolled home through the fine, warm summer night, and by now most of us were getting our bearings, helped by the two main landmarks, the Cathedral spire and the tower of the City Hall.

On Friday 50 members went off for the day on the Broads and 27 to Holkham, but there was a good attendance at the Stuart Hall for the second day's discussion. The speakers at this session made everyone feel that things were moving in the right direction and that the profession was really determined to keep up the momentum.

There was a brief interlude of song by the immediate past-

President of the A.A., whose poise was as admirable as his voice. Why did he not perform at the Dinner as well?

The discussion ended in good time for members to disperse on the various tours, some to Blickling, others for the half-day tour of the Broads.

The party that accepted the kind invitation from Mr. Humphrey Boardman's mother, Mrs. F. E. Boardman, to visit How Hill, Ludham, were enchanted by the water garden and will not soon forget the massed azaleas and rhododendrons, nor the newly-hatched swallowtail butterflies liberated by Mr. Boardman. Mrs. F. E. Boardman was an honoured guest at the Conference Dinner later in the day.

It is hard to say who enjoyed the Broads trips more: those who already knew and loved the Broads or those who were seeing them for the first time. On the afternoon trip the party spent two hours in a motor launch, cruising gently along rivers and exploring a couple of the smaller Broads. There was great excitement, again equally divided between experts and novices, when a bittern was sighted. It did not boom.

And so we came to the concluding official gathering, the Conference Dinner in the dance hall at the rear of the curious and ancient Samson and Hercules House in Tombland. Here the décor was in strong contrast to that of the Assembly House and the Castle Museum, but the dinner was excellent and the ventilation robust. Mr. Charles Saxon, Vice-President, proposed the toast of the City of Norwich in a fluent and well-phrased opening speech, and the Bishop of Norwich, who replied to the final toast, that of the Guests, gave a splendid oration.

On Saturday morning the conference broke up, still in bright sunny East Anglian weather, although some stayed to go round the City Hall with Mr. C. J. Tomkins [F], Deputy City Architect. Others had a last stroll round the Cathedral, which more perhaps than anything on the official programme spoke to us in the language of architecture.

About 650 attended the Conference, including three Australian visitors, Mr. Alan Ralton [F] of Melbourne, who with his wife and daughter was making an eight months' tour of Europe and had dashed back from Norway for the Conference; and all must be grateful to the Norfolk and Norwich Association for the excellent arrangements; particularly Mr. and Mrs. Humphrey Boardman, who personified East Anglian calm and hospitality. Much credit also was due to Mr. C. J. Tomkins, to Mr. Donovan Purcell [F], who edited the excellent Handbook, to Mr. Robert Bond [F], Chairman of the Reception Committee, to Mr. Lionel Smith [A], Chairman of the Exhibition and Publicity Committee, and all the other hard-working members.

The British Architects' Conference for 1957 will be held in Oxford.

## R.I.B.A. Cricket Club

The Club Secretary tells us that many of those members who were responsible for setting up the club again after the war have now, for reasons either of age or business, had to retire from active membership. He would therefore be pleased to hear from members with cricketing ability who would be interested in joining. The fixture list for the season is given on p. 362 of this JOURNAL, and members are wanted who would be available for at least one or two of the matches.

The Honorary Secretary of the Club is Mr. Derek L. Robinson [A], of 140 Kenilworth Court, Lower Richmond Road, Putney, S.W.15.

## R.I.B.A. Golfing Society

Golfing architects who are interested in joining the R.I.B.A. Golfing Society should contact the Honorary Secretary, Mr. S. H. Statham [A], Messrs. Sydney Clough, Son & Partners, Devonshire Close, 39 Devonshire Street, London, W.1. (LANgham 7101/2/3).



# The British Architects' Conference 1956

## Norwich 30 May—2 June

### Architectural Economics

Discussion on the papers read by E. D. Jefferiss Mathews, O.B.E. [F], J. C. Weston, Ph.D., J. L. Martin, Ph.D. [F]

**The President, Mr. C. H. Aslin, C.B.E.:** Before we begin the business of this Conference I know you will all be delighted to hear that Mr. Harold Conolly who is to be a Vice-President next session and Mr. B. D. Storey the Town Clerk of this city have been honoured with the C.B.E.

You will, I think, agree with me that over the past few years there has been a change for the better in the type of papers we have had. They have been lately much more seriously informative than in the distant past, and I look forward to this Conference with the same anticipation as we felt last year at Harrogate, after our experience of the Torquay meetings.

We are extremely indebted to the Norfolk and Norwich Association for all the arrangements they have made. The Secretary will know better than any of us from his experience over the years what a vast amount of work is entailed in making these preparations. I understand that the local committee which is responsible sits at regular intervals for nearly twelve months. I think our special thanks are due to Mr. Humphrey Boardman, the President of the Norfolk and Norwich Association, who has

acted as Chairman of the local Executive Committee and also Mr. Tomkins, their hard-working Honorary Secretary.

We are also most grateful to the Lord Bishop for kindly allowing us to have our garden party this afternoon in the Palace garden and also to the Dean and Chapter for so kindly combining Evensong with a special service for the members of the Conference. This is a feature which I should like to include in every year's Conference, but it is not often that we have the privilege of meeting in a city which has such a lovely cathedral as Norwich.

The serious business of the meeting is the presentation of the papers by three experts on 'Architectural Economics' which those of you who have read the papers will agree is not nearly so dull as the title indicates. I have little doubt that there will be a very full discussion after the synopses of the papers have been presented by the three lecturers, but just in case there should be a complete silence we have, by arrangement with the speakers, prevailed upon two or three people with special knowledge of the subject to initiate the discussion. I cannot but think that once it is started it will run

on for its full course until the completion of the meeting tomorrow morning.

Before I make way for the speakers I should perhaps say one word about the follow-up of the discussions which we have at these Conferences. Arising out of the Torquay Conference two years ago when we had the masterly exposition on building materials and techniques by Messrs. Allen and Mills, liaison has been made, and will go on being made, with some of the manufacturers of building materials which I hope and am sure will produce useful results. Following on the very wide range of discussion last year arising out of the papers by Sir Thomas Bennett and Mr. Woodbine Parish, committees have been considering all the various points which were brought up both in the papers and in the discussion, and I understand that the Council of the Royal Institute are being recommended by the Executive Committee to produce a report in the JOURNAL saying how the various points have been dealt with and what action is being taken. Similarly we shall make certain that anything tangible arising out of the papers and discussion this year is not lost sight of; it will be followed up.

*The three authors of the Conference papers then gave brief summaries.*

**Mr. E. D. Jefferiss Mathews, O.B.E., A.R.I.C.S. [F]:** Early in my paper I made a statement that some of you may consider controversial. I said that architecture was the only art wholly related to economics. I personally believe that to be completely true. The relationship between design and economics can have a most speaking effect on our design, and for this reason the economic aspect cannot be separated from the pure creation of design. This was less noticeable in the past, but in fact this feature was present in one form or another, even going back to the building of the cathedrals. Therefore we are following tradition if we study costs. And in view of the present national and international conditions the study must be a particularly careful one today. Everything has become more intricate and demands greater expert knowledge.

A closely related point is the need today for design on a team basis, for collaboration with other experts—engineers, quantity surveyors—in which however we must be the leaders, even though we must study their requirements.

**Dr. J. C. Weston:** The Building Research Station is much concerned with the question of the cost of building, and therefore I



At the Conference in the Stuart Hall; Left to Right: Mr. C. J. Tomkins [F], Secretary Conference Executive Committee; The Secretary R.I.B.A.; Mr. Humphrey Boardman [F], Chairman of the Conference Committee; The President R.I.B.A. and Mrs. Aslin



Mr. E. D. Jefferiss Mathews



Dr. J. C. Weston

welcome the opportunity of taking part in this discussion.

Architecture is essentially a matter of choosing between alternatives, and architectural economics is not a means of making these decisions, but of providing data on which our decisions can be made. Nor need attention to cost mean that the design will suffer. And here I would refer you to the series of articles on cost analysis that have been appearing in the ARCHITECTS' JOURNAL. I welcome any spread of the publication of cost data, relating cost to design. It is not yet commonplace to provide information on cost as well as design. But this analysis of cost is largely the reason for the success the Ministry of Education have had in producing schools at a low cost. Another aspect of the subject of Architectural Economics is the attention which is paid in design to the problems of building and to the methods and plant which may be available. It is for consideration, for instance, whether the design of shuttering should not properly form part of the contract drawings.

In a period such as the present when we have new techniques we have to find some way of marrying together production experience and architectural design. Building stands alone among the major industries of any country in separating design and production. We hope that a method of achieving this will come out of the Conference. We must remember that costs will go on rising over the next 10 or 20 years and must make allowance for that.

An example of the kind of question we have to bear in mind is, is it better to centralise education, building a limited number of large schools, which will result in a large bill for transport per annum, say £100 to £150 (each child) or would it be better to spend more on a number of smaller buildings and reduce the bill for transport? This must depend on the circumstances of a particular authority. But a comparison of running costs and first costs would enable the problem to be considered on a rational basis.

Take again the maintenance costs of local authority housing. We find that



Dr. J. L. Martin

maintenance costs over the life of a house are the equivalent of 18 per cent of the first costs. In fact when that figure is broken down further there are only one or two items for which the maintenance cost forms a higher percentage of the initial cost. For example, water services and external painting. We should achieve a better balance between initial and maintenance costs. A high maintenance cost can be justified for items which will be scrapped after a few years.

I am sure the majority of you are convinced of the importance of striking a proper balance, and our main object in the discussion that is to follow should be to develop ways in which economic data can be made available to the architect from the earliest stages of the design process.

**Dr. J. L. Martin [F]:** In dealing with buildings built by public funds I do not speak just for official architects. Many private architects have played an important part in school building and in housing and will take an important part in technical buildings such as hospitals. All this work is financed by public funds and it

is important for the whole profession that that expenditure is wisely controlled. This is the background of my paper.

The fact that these programmes are large can well lead to an attack on the study of architectural economics. There are two main ways in which this can be done. The first is research. We ought to aim at research which will produce the required knowledge for all architects in the profession. There are two alternatives: either we develop architects who are specialists in certain types of buildings—and in my view architects dislike specialisation of that sort; they like to work on all sorts of buildings—or we developed specialised knowledge which is available to the profession as a whole. In my view the profession will be stronger if we do this. Secondly, the building programmes going on throughout the country are in themselves excellent opportunities for the investigation of cost. If such investigation is systematically carried out there is no reason why it should not be available to all the profession.

But a school, a hospital or a laboratory is an extremely complicated programme and I don't think an individual architect can investigate all aspects. Neither, I think, can doctors or hospital boards put down factual data about requirements. And if an individual building is designed on the basis of 'hunches' it is wasteful.

The experience in school building over the past few years has impressed me enormously. The total expenditure on primary schools from 1951 to 1955 was £52.5 millions. If the 1951 costs had been allowed to rise in relation to rises in the cost of materials and labour, the cost of that programme would have been £59 millions. But they were not allowed to rise. From the centre there was a definite effort to discover how the parts of the buildings should be used and how reasonable economies could be obtained.

Secondary schools cost £124.3 millions. The figure would have been £146.9 millions. The saving was almost entirely due to the work of research teams and to the skill of the architects who have assisted with the school buildings programme.

Put this another way. If you look at the number of places you can buy in schools for a million pounds, you will find the number of places we have been buying is almost constant. You would have expected the number to have dropped, but here are the figures: in 1951 we built 6,580 primary school places, in 1952 6,820, in 1953 6,790 and in 1954 6,640. We have therefore been able to purchase for one million pounds the same number of school places—have sometimes been able to increase the number—in spite of rises in costs. This is a case where the profession as a whole has achieved results.

And now there are two points which I should like to make. First, I hope that this profession is not going to be afraid of research work; is not going to feel research is going to put it out of its job. The purpose of research is not to enable someone to make decisions but to provide facts. The architects themselves must still make



the decisions. Secondly, there is the point that research costs money. I don't think it should be wasted in any way. There could be nothing worse than each architect trying to do his own research. I believe the research should be done in the Ministries, at the D.S.I.R., at the universities. We have to explain to the public that sometimes you have to spend money if you want to save money. I know an official architect who proudly reported that the employment of three men on research had saved £23,000. He was asked why he had wanted three men!—wouldn't one have done? His reply should have been that if he had had six he might have saved more! We have yet to convince the public that architects not only spend money but save money. Programmes could be more wisely planned if we had more research work.

Now I want to stress the ways in which I think an investigation of costs can be made in programmes of building. I think the range of building going on at the moment gives a great opportunity for the widest possible experiment and the widest possible series of cost comparisons. I don't know how it could be organised. The Conference can discuss this. How that knowledge, once obtained, can best be sent back to the individual architects is another matter to which I don't know the answer. We shall need all the help we can get in this from the builders and quantity surveyors.

*Dr. Martin then showed a number of slides of plans of schools and hospital wards showing the economies that had been achieved through planning.*

## Discussion

**The President:** I know you will be delighted to know that we have with us representatives of the quantity surveyors; Mr. S. N. Rose from the Ministry of Education, and Mr. C. M. Nott from Hertfordshire.

**Mr. S. N. Rose, Ministry of Education:** The subject chosen for this Conference is, as you may imagine, of intense interest to all quantity surveyors and I am very glad to have this chance to add a word or two.

I thought it might be relevant to Dr. Martin's paper if I outlined the method of cost control and the architect/quantity surveyor liaison which is currently in use at the Ministry of Education. Please do not think that there is any intention to be dogmatic. This is merely a report on an experiment which we think is justifying our hopes.

The basic precept is that mentioned in Dr. Martin's last paragraph—the use of cost control as an instrument at the design stage. And the way it is done is this:

Suppose we divide the work in the architect's office, prior to the quantities stage, into Investigation, Design and Working Drawings. I have no illusions that it is possible for you to parcel up your various aspects of work into clear-cut divisions like this and quite obviously the three phases must merge. But the fact is that these functions must all take place and when

a programme is drawn up it is rational and sensible to make an appropriate allowance of time.

At the end of the investigation period the architect will be aware of the approximate area he is to provide. He now operates his first control by choosing a cost per foot super of floor area for the proposed project. Floor area has been selected because it is a more accurate measure of accommodation than the cubic foot, and for the client, accommodation is the thing which really matters. The architect's design from now on is always related to cost. I can sympathise that to begin with this may produce a feeling of irritation and may be to some degree irksome to the artistic side of his nature, but if he wishes to keep the cost reins in his hands he has to accept what amounts to a discipline.

Meanwhile a sketch design will be available (which may be no more than an outline plan) and the architect can provide some rudimentary indications of the standard of construction, finishings, services, etc., required, together with an idea of the conditions to be met with on site. The more complete the information the better, but the exercise is not invalidated if some item is missing at this stage. In such a case the architect makes an assumption which he considers reasonable and which he later confirms.

Armed with these details the architect and quantity surveyor now meet to prepare the cost plan.

To begin with it is prudent to make some allowance for uncertainties. For instance, there may be changes, before the tender date, in cost of labour and materials or there may be unavoidable alterations in design which are only evident as the scheme develops. The exact amount of allowance is bound to be conjectural, but 5 per cent is a reasonable figure to act as a buffer, and this is deducted from the cost per foot super that we have just mentioned, giving a new and somewhat reduced target.

Since total cost per foot super would be too insensitive a control of itself, in our cost plan we consider and allot a cost per foot super rate to each individual part of the building (for example, external walls or roof) which we call an element. One or two cost analyses of other reasonably similar jobs should now be produced from our files kept for this purpose; we do not require a large number of analyses for we are not particularly interested in averages. Where the building is a first-off and we have no similar analysis in the office, then there must be some improvisation such as a resort to data published in the technical journals and relevant portions of analyses of dissimilar jobs in our own office. But I cannot too strongly emphasise the advantage of intimate knowledge by both the architect and the quantity surveyor of the quality of the jobs to which the analyses refer and we think it is always worth while for a visit to be made together to the building so that discussion of its specification in relation to its analysis is upon a common basis.

The analyses we are producing today are rather more elaborate than those illustrated

in Dr. Weston's paper. Those who followed the ARCHITECTS' JOURNAL Guest Editor series last year will recognise the form. There is a good deal of tabulated information including quantities and ratios together with brief specification notes. The corresponding quantities and ratios are now calculated from the sketch design for the job with which we are concerned and we then have all the necessary information assembled for commencing the cost plan.

The choice of a cost per foot super for each element will be based upon the specimen analyses. Few of the rates shown there will be accepted without alteration because they will have to be adjusted for fluctuations in building prices, differing quantities and differing standards of quality. Fluctuations are dealt with by applying a percentage adjustment obtained from office records. The adjustments for differing quantities are made from the areas and ratios by simple proportion, and in the case of differing standards of quality these can be taken into account either by a direct calculation or by assessment. Perhaps this sounds laborious. I assure you it is not so and for those who might be interested in experimenting with the technique a complete description of the process is included in the first revision of the Ministry of Education Building Bulletin No. 4 which will be published quite shortly.

Upon adding up the cost per foot super of floor area of the individual elements, if the total exceeds the amount allowed the cost plan must be pruned until it comes within the target. If on doing this the architect is of the opinion that the quality of the building is too low then he must either reduce the area provided or obtain approval to higher cost limit. The value of being able to present a reasoned case on cost—which the cost plan provides—to the client as early as the end of the 'Investigation' phase will be only too apparent. The client will have much more confidence in the architect and the architect will be much more confident that what he designs will ultimately be built.

The cost plan being completed, we can translate all the costs per foot super for the individual elements into sums of money by multiplying each by the area of the building. The cash value of each element, you understand, will now total up to the total cost to which we have limited ourselves (or to which we have been limited!).

The architect is constantly interested in comparing the costs of alternative materials and methods of construction. The cost plan provides him with a handy guide, because since quantity and cash available are fixed, a rate per unit of measurement results for his immediate use in his enquiries (e.g. 30s. per yard super for partitions).

As the design period of the programme proceeds, each element undergoes what we call a cost check by the quantity surveyor when the architect's proposals for a particular element (these are often pencilled and unfinished drawings and sketches) are costed against the amount of money available on the plan. Although, as I have said, we intend to stick as closely as we can



to the cost plan, do not for a moment think that it is completely rigid and inflexible, for if it becomes clear that one particular aspect of the job has been underrated then we adjust the figures and reduce the rates of one or more other elements to balance.

As things are bound to be fluid right up to the time when the drawings are ready for the quantity surveyor, we carry out a final cost check just before the preparation of the working drawings. This will ensure that the quantity surveyor has not missed any major changes that have been decided in the architect's office. Much of this work will be merely a repetition of former checks.

In due course the working drawings are prepared and are forwarded to the quantity surveyor, the order of delivery being arranged by elements, so that the quantity surveyor can start preparing the bills in elemental divisions. This is logical when we remember that the cost plan and cost checks have been in elements and that we shall eventually want the analysis of our own particular job for use in subsequent planning. Once the elemental bill has been priced the cost analysis is ready-made and the abstracting into elements that would be necessary with the trade-by-trade bill is obviated.

Having kept so close a hold on costs throughout the design, when we put the bills out to tender we can be reasonably confident that we know what the answer is going to be and that there are not going to be any rude shocks. Of course, if a negotiated tender is contemplated a contractor can be brought into the cost checking, he and the quantity surveyor carrying out the process independently and negotiating any wide discrepancies. Where this has been done the tender figure is virtually known beforehand, which although viewed with suspicion in certain quarters would very likely provide as much as, and possibly more value for money than, the competitive tender. But that is another question.

As Dr. Martin has mentioned, there are other advantages accruing from the use of bills divided into elements instead of trades which have considerable impact on the architect, quantity surveyor and builder, and I should like to summarise these before I close.

The architect is given a document which he can use with confidence for reference purposes. (Drawing numbers are shown wherever possible in the bills.) The quantity surveyor, while employing rather more paper but no more time than ordinarily, makes his duties immeasurably easier and more efficient right up to and including the final account. The builder's estimator may be sorry to find the trades to some extent scattered and requiring collection before being sent out to sub-contractors, but nevertheless he sees each item in its exact context, as do also the planning and buying departments of his office. The contractor's site representatives, after their initial surprise has subsided, are enthusiastic, for here is exactly the sort of document that is needed in their offices from that of the organising agent to the bonusing clerk. And let us not underrate the patent

honesty of the elemental bill. If there is a slip in the quantities it stands out a mile (which means of course that the quantity surveyor will be unlikely to let it by in any case).

Personally, I like to think that the elemental bills of quantities are symbols of an enlightened attitude to the contemporary needs of the industry.

Whilst for economic reasons it may have been easier for Central and Local Government Departments to pioneer this divergence from tradition, may I commend it for your consideration, for undoubtedly there are benefits arising. Some private offices of both architects and quantity surveyors and several local authority offices are already experimenting with methods, not necessarily identical, but very similar to those which I have outlined.

We talk a lot about preplanning. Here is a practical example and I am quite sure that the more effort put into cost control work during the early stages of a job the greater the rewards later on.

A parson on holiday attended the local church and put a half-crown in the poor box. As he was going home the verger ran after him, explained that on this occasion the contents of the box were being given to visiting clergy, and handed him—half a crown. 'Oh, Father,' exclaimed his small son, 'what a pity you didn't put more in. You would have got more out!'

**Mr. C. M. Nott:** I think that one of the most important points in architectural economics which underlies the three papers we have heard is 'Preplanning'.

This may refer to the client and can mean the earliest possible co-operation between architect and quantity surveyor and client himself to preplan the bounds of the scheme; to preplan the distribution of the cost of the integral elements of the project in order to ensure that the scheme for which tenders—competitive or negotiated—are obtained is the one on which the contract is formed; thus obviating any ruthless cuts in cost by changes of specification or radical alterations of design to make the scheme fit the client's purse, and variations during the course of the job. It also means preplanning as much as possible the work covered usually by prime cost sums in bills of quantities, so that they can be measured initially giving the general building contractor—when pricing—the most complete picture possible of the scheme as a whole, and preplanning by the general building contractor to ensure no shortage of materials and labour during construction.

One large contracting and industrial design organisation even goes so far as to place a premium on the making of variations during construction by contracting initially to continue unchecked all works until the architect has not only issued a signed variation order but has also perhaps, with the assistance of the appointed quantity surveyor, negotiated and agreed a sum price for the variations. Goodwill between all parties is paramount in such a contract because the general building contractor is always in the stronger position. I

am not advocating such a change for all contracts, but there is no doubt that any course of action which will expedite the settlement of final accounts and also the calculation and passing of maximum safe cash payments at interim stages in contracts will eventually reduce costs within the building industry.

A contractor in pricing bills must always allow for the high rate of interest to be paid out by him on locked-up working capital in financing building works and he bases his calculations on his experience of the many grossly and complexly varied contracts where accurate interim and final assessments of the ultimate cost are all too frequently in arrears and his payments with it.

The fact that the general tempo of building from client's instructions to occupation has been high ever since the last war—too high in fact—has in my opinion added to costs. Preplanning could have saved some of these costs—*more haste less speed* is translatable into building language as *more haste more cost*. That is not the same as saying more speed more cost particularly in relation to the actual construction work. The Concise Oxford Dictionary defines haste as precipitancy and speed as rate of progress.

Those in Government and local government service realise that the possibility of team work between architect and quantity surveyor may be easier than between private firms of the two professions, but there can be no doubt that close co-operation and cost advice at initial sketch plan stage is most essential to sound building economics.

This co-operation will not come quickly for most offices have too large a back-log of work at the moment. But for a better future I suggest training of student architects should cover the subject of this Conference in more detail than before. Similarly, there must be sympathy with the aims of the architect instilled into quantity surveyor students. Pure economics is a subject in the R.I.C.S. syllabus; perhaps this should be widened to cover applied building economics to this end.

Dr. Weston poses the question as to who should accumulate data for cost analysis, the architect or quantity surveyor. I hope I am not presuming when I say I think this eventually will naturally fall to the quantity surveyor because he should be in a better position to adjust the information held for fluctuations in labour rates and material prices, etc., as the market changes. There is always danger in data being used out of its context. The supporting specification to any particular cost data for a building element is most necessary as is the knowledge of the other contract conditions such as locality, size of contract, site conditions, economic conditions of the time, quality of job, management, etc. I have found that although this approach to cost control is new, the architects with whom I have had the pleasure of working do find the precise summaries of the cost analyses we have issued to be sufficient to be of interest and of use in their work, particularly for relative

comparisons of cost of alternative construction.

Just as most architects now have a knowledge of yardstick prices in all trades, so they will develop a knowledge of yardstick rates of functional prices without necessarily being able to price out a bill of quantities or make a final estimate, while the quantity surveyor must be prepared to support the architect with fully detailed information.

Dr. Martin's support of elemental bills is stimulating. I count myself fortunate in being connected actively with the preparation and use of some dozen full bills for primary and secondary schools. There is no doubt in my mind that there is scope for more activity in this direction. I'm sure all approaches have not been explored, as Dr. Weston said.

Here the actual number of elements is perhaps of less importance than consistency of practice in layout and allocation of items to headings, although the number depends fundamentally upon the number of functionally separable parts of the building. But the builder's estimator must be considered.

The general contractor's estimator is the only member of the building team whose task takes longer with elemental bills, but from the point of view of the industry as a whole this I think can be justified.

If one is negotiating a tender based on a bill of quantities then the elemental bill is ideal and the number of elements and sub-sections of the elements can be mutually arranged to suit the future production of more detailed cost analysis data than usual and/or to assist the general building contractor in progressing the works with finer detail than is afforded by what we have now come to regard as the standard nineteen heads for a multi-storey framed building.

One thing which elemental bills or cost analysis under elemental headings from normal trades bills does throw up most clearly is the effect on total price of all the various labours concerned with a particular material or construction because they are all grouped together.

So often one tends to compare the basic price of xs. per yd. super of a partition, breeze plastered and painted both sides with, say, thermoplastic panels in standard sheets at ys. yard super without an exact knowledge of the ultimate price after allowing for expansion joints, cover fillets, fixings for skirting, preparation for lighting conduit and switch-boxes and so on, when the ultimate cost per yard may be reversed in the final detailing.

In the same way, often firms marketing goods do not show to full advantage either through advertising matter or through their technical representatives what overall savings might result from the use of their product. The conception of price in elements does help here considerably.

Do the professions as a whole accept this as a reasonable approach to the problem?

**Mr. Cecil Howitt, D.S.O., O.B.E. [F]** (Nottingham): I think there is one point that has not been stressed quite enough in the excellent papers. More stress should be placed on very early negotiations with the



Mrs. Humphrey Boardman and Mrs. C. H. Aslin receiving guests at the Informal Reception

contractor, if economies are to be effected. He is the man who is going to do the job of work. I know you don't know who he is at first, but with one's knowledge of the profession it should be possible to find, say, three of the type you are looking for, cadge a little information from each, and then you can get a much more satisfactory solution and save all that altering at the end and re-tendering.

The building trade is after all like any other. Take, say, the hotel or restaurant trade. There you have the *spécialité à la maison*—the Grosvenor cocktail, sole à la Scott's or the Dorchester ice. It is the same sort of thing in building. There are always three main ingredients: (1) high quality, (2) rapid production and (3) low cost. If you are a cook those things never mix properly. So what does one do?

I must give an example. I had to build a house for £300 in 1922. No more rent could be paid than the house had cost. It wasn't a question of the accommodation that was required, but of what you had in your pocket. I had to face that problem. House costs at that time averaged £430, so it was a lot to take on. The only solution possible was 'See your contractor.' Speculative builders—in those days we called them jerry builders, but I don't think such people exist today—were doing these cheap things. I had a seven days' conference with these gentlemen and learnt more in those seven days than I would have learnt from any architectural books in seven months.

There is another snag. Three bedrooms are considered essential, so you have no alternative but to go up on to the second storey. This gives you a terrific floor area. Our £300 house came up to 820 ft. net floor area.

When the tenders came in they were for £298 10s. That gives the point that I am making. You must see the builder, whatever type of scheme—small or large—you are engaged on. The architect's knowledge in these days when he has got to learn about so many trades is a little bit sketchy on mechanical equipment. These new mechanical equipment ideas are coming up every few months, and the only thing is to get to know the best people and learn from them.

Bear in mind too that Americans never

build, they merely assemble. The job is finished before it starts. The Lever building in New York—possibly one of the best buildings of recent times—is 85 per cent workshop-made. You must get everything prefabricated so that it slips into place automatically, and in that way moreover you are not held up by bad weather conditions. There is another consideration too, which is that if the building is of any height it is an advantage to finish it from the ground floor upwards and not from the top downwards, because if you do it that way you are losing rents.

I think this question of economics is really the vital, the Sabrina dimension of all our building schemes. Unless you look after that any private office will close down within a few weeks.

**Mr. B. A. P. Winton Lewis [F]** (London): I am a representative of that nearly extinct race, the architect with a small private office. The jobs one has are extremely varied, some big, some small, but even the better ones must relate closely to cost and value for money.

Mr. Howitt has very much stressed the importance of calling in the builder early. One other point might perhaps be emphasised. Some firms when they have a choice in selecting a site might well perhaps call in the architect earlier. It may be a purely economic consideration: for example, in the case of a large firm which still has to have its headquarters in the City of London but may perhaps find it economical to keep its records somewhere in another place, perhaps on the outskirts, where rent costs are lower. They may also be able to get clerical labour more easily and cheaper there. The point is important since the cost of the site is a part of the capital cost.

There is another point which is rather unfortunate because it cuts across pre-planning. Take the case perhaps of the small commercial client who hopes to let some of his office block as shops; there are also cases where a building on an expensive site has been damaged or destroyed during the war and it has perhaps been idle for fourteen years. It is a capital asset but it has been frozen. In these cases a client doesn't take too kindly to being told that you require an extra six months for preplanning. He will take it that something similar to the building next door will do. Many clients still need convincing on this point.

I should also like to make the point that particularly in the matter of special furnishing our system of measurement is most inconvenient. The metric system is highly desirable. It is only the countries of the British Commonwealth and the United States that still adhere to the foot as a unit. The metre is so much easier to split up. All the building components and furniture can be designed on modules based on the decimal system. When everything is interchangeable and can be bought ready-made for most purposes that effects a considerable saving. It would particularly apply to the speculative houses now being built. Much could be saved by a greater standardisation of parts so that if one thing were not



Mr. R. H. Mottram, author and ex-Lord Mayor of Norwich: on the left his nephew, Mr. James Mottram [A] and Mrs. Barbara Mottram [Student]. On the right, Mr. Gordon Steele [A] and Mrs. Steele



Mr. Kenneth Cross, President-Elect R.I.B.A., with Mr. T. M. Alexander [F] and Mr. L. W. M. Alexander [A], President Liverpool Architectural Society

readily available an alternative could be used.

Mr. Howitt mentioned a £300 house. When are we going to see something like that again? The comparative cost being nearly five times as much today, that means we want to see a house costing £1,400.

Much is added to the cost of housing—particularly to private housing—by the continuing reluctance to have reasonable sized gardens. Twelve to the acre is the density laid down in many places and this results in wasteful expenditure on roads and services. It also encourages a pepper of semi-detached. Tighter grouping, perhaps terraces, would help.

Also many local authorities and owners look askance when you talk of internal bathrooms, but where frontage is valuable there should be no difficulty in terrace houses, let alone blocks of flats, with mechanical ventilation in bathrooms. It would also be useful to have more information about air conditioning. No one likes to pioneer. I think of my own recent experience. It is extremely difficult to get the necessary information for installations in small units.

**Mr. Gordon Steele [A] (London):** I should like to take up the last speaker's final point and also Dr. Martin's point about research and the results of research for the building industry. In his paper Dr. Martin quoted Mr. Llewelyn Davies as saying that the purpose of research is to give architects 'and others who use building the information which enables them to make the right decisions'. May I amplify this. The purpose of research is to give the building industry information to enable them to make the right decisions and to give it quickly and in a useful form. We all know that the information is there. Every architect's wastepaper basket is filled every day with the evidence. It is quite impossible for the average architect to keep in touch with the stream of stuff that comes out. It is particularly so because the information is being put out in too many different ways and without sufficient appreciation of the needs which it is supplying.

It is rather like a knitting pattern. I see my wife poring over mysterious looking hieroglyphics and out of them she can produce a very presentable and usable garment. I had a shot once and the result was a combination of tangled mess and large holes. That is rather the state information is in at the present moment. It seems to me that this information should come to the whole of the building industry, the architect, the engineer, the quantity surveyor, the building contractor, but most especially to the profession, in a form which is free from commercial and sectional interests. It should be sent out from some form of national organisation. We have been given a lead by the N.F.T.B.E. who have got this Building Advisory Service working to advise contractors on site organisations, mechanisation, productivity and so on, and that system is available from the Federation's regional centres to anyone who asks for it.

My experience is that if one has to sit down and write a complicated letter to explain a problem there is a tendency to shelve it or work on a 'hunch', or just muddle through. But if it were a matter of just ringing up someone along the street it would be different. I should like to see some form of organisation distributed regionally throughout the country with as many centres as possible. I should like to see that organisation too as the focal point of a two-way traffic: in one direction passing on information which comes in as the result of research by the B.R.S. and other Government research organisations and also from the industrial research associations and at the same time taking problems from the architects and builders and engineers, answering them on the spot if possible, if not from the experience of some other regional organisation or passing them back for research. Something of this is done by the Technical Information Service of the Ministry of Works and I hope that with Mr. Bird's new appointment—on which we all congratulate him—it will go a stage farther.

As Mr. Jefferiss Mathews has said, the architect is the leader of the team. My

opinion is that this organisation I am talking about should serve the team and not the leader, but at the same time it is up to us as leaders of the team to get some sort of organisation going.

**Mr. Clifford Culpin [F] (London):** Mr. Jefferiss Mathews, in indicating the scope of his subject, has taken as the lowest limit the small house; and though most of our considerations at this Conference will relate to the bigger and more important buildings, perhaps I may, as Chairman of the R.I.B.A. Town and Country Planning and Housing Committee, be permitted to deal with the question of the small house.

With the shifting of responsibility for producing houses from public to private enterprise, which is purely a political move, housing has largely passed out of the hands of the architect. This is a deplorable state of affairs and presents a problem with which my Committee is trying to come to grips. The small house is one of the most important items of building to the nation. The man in the street is probably much more concerned with the house in which he lives than he is with the shop in which his wife buys the provisions, or the factory in which he works. What we want this man to have is *value for money* and (if we are allowed to play any part at all) we must see that he gets it. The problem is not just one of so much space enclosed in a certain way, there is, for instance, the major factor of orientation which the speculative builder ignores, and a house does not present as good value for money as it might if the principal rooms face north and the sunshine pours into the larder and the w.c.

There is one quality that the architect can impart, which is less tangible than construction, planning and orientation: the quality of *seemliness*, *comeliness*, *attractiveness*, or, even (dare I say it) *charm*. If an architect can impart this elusive quality to a house the value has most certainly been enhanced and enhanced in a way that can never be learnt from statistical tables.

In considering small house design for private enterprise we are treading on difficult ground, for the building societies



have in the past tended to consider an architect-designed small house as a bad investment while they have jumped at the chance of putting money into the normal bay-window 'semi'. Now, however, I think we are winning them over, but in any case, while at the time of erection an architect's design may not have been welcomed by the building society, after the house has become established it almost always increases in value; and the skill that the architect has put into it has created the additional value. The work, of course, has to be done by a good architect and, unfortunately, there are a lot of bad ones about as Mr. Jefferiss Mathews has indicated. Rimmer, in his book on *The Law Relating to the Architect*, says in the preface that he knows of no such exacting profession as that of architecture and it is continually becoming more and more difficult. It is no wonder, therefore, that there are so many architects who fall short of the ideal. Doubtless all of us here at this Conference do measure up to this standard but I am afraid there are many who do not, and the small house unfortunately gives these fellows a chance to do their worst. This is where the R.I.B.A. Small House Designs Scheme, on the promotion of which Mr. Jefferiss Mathews has spent so much time and energy, will come in and will offer the house-building public unique value for money in the form of anonymous designs that are the finest the profession can produce. This is a scheme for which I feel great enthusiasm and hope we shall get keen support for it throughout the profession.

Turning to Dr. Martin's paper, I should like to see this Conference give the strongest support to the elemental bill of quantities and to send a resolution to our friends at the R.I.C.S. to encourage them to adopt this system at the earliest moment. Quantity surveyors as a profession have always seemed to me to be singularly conservative and we must get them to adopt a more imaginative and flexible attitude and to co-operate with us in the very earliest design stage instead of, as so often happens, only coming in when the drawings are complete.

The old, sound custom of architect-quantity surveyor collaboration has been, in my experience, largely destroyed by the custom of the new type of client, the public body, appointing its own quantity surveyor without reference to the architect. In my own medium-sized practice we have no fewer than thirteen firms of quantity surveyors working with us, most of them having been 'wished on' us by our clients. This very largely destroys our chances of intelligent analysis of the costs of different systems of construction in different jobs and is, in fact, rather silly. I would therefore urge those local authority architects here, who advise their Councils on the appointment of outside professional men, to recommend those Councils most strongly to allow the architects to nominate their own choice of quantity surveyors and thus give the architects the chance of giving the Council the benefit of proper study of the economics of their building projects.

## DISCUSSION: SECOND DAY

**Mr. E. D. Jefferiss Mathews:** I should like to summarise the main points that seem to me to have come out of yesterday's discussion, and those on which I think our discussion ought to hinge today. For we should not overlook the important fact that what we achieve at this Conference will not be solely in our own interests nor in those of our clients but in the interest of the whole national economy. We are the acknowledged leaders of the building industry which is of vital importance to the country. We must not forget too because we tend to work in small units and see only a comparatively small part of the building industry that it is an industry that spends a very considerable sum of money. We must remember from time to time to place ourselves on a pedestal, and that pedestal must be kept secure, because if it isn't our fall from it will be unpleasant.

The first point, then, is the challenge to us to produce good architecture within the economic requirements of our time. I said in my paper that there is nothing new in that and I think we should bear that in mind if these studies into costs tend to be irksome. And in this challenge it is not sufficient for us to sit back and accept what our clients require blindly. Frequently their requirements are not economic and may well result in cheap buildings, which means bad expenditure, and it is up to us to point that out to them at the outset. They may at first tend to think we are going out of our field, but if we put it over to them in the right way our status will in the end be raised.

The second point is that we need to have the wherewithal to put these facts to our clients, and that means research, cost analysis and factual evidence right from the beginning. Dr. Weston gave us a very good indication as to where that factual evidence can be obtained. Our quantity surveyor friends gave us an indication of the development of cost studies and described this elemental bill—which is rather an unfortunate name, I think. Some speakers mentioned the need for an improvement in technical information. There is more scope for unbiased information on proprietary goods. It may well be that one of the constructive outcomes of this Conference could be a study as to how there can be a general improvement in such information being available to us.

Related to this question of research is the need for collaboration with our clients in the preparation of factual data. Dr. Martin brought that out clearly when he showed us the chart of requirements of modern surgery and medicine. It is not possible for any one section of society to produce all the disinterested information required. It must be produced on a co-operative basis. It rests with us to initiate that and guide the various parties as to how to produce the evidence.

The third point is the need for early collaboration with the builder and contractor. It is interesting that that was also a prominent feature of last year's Conference. It indicates its importance. We all know the obvious snags and difficulties but

this is progressing in the right direction, and I am sure that, in the future, although its coming may be slow, there will be different approaches and far closer collaboration. And that will be a tremendous advantage to the cost aspects.

The point was mentioned about the importance of an architect appreciating more than in the past the contractor's site problems. That can be done only by collaboration since we cannot and must not attempt to be experts in other people's business. We must beware of that dangerous thing, a little knowledge. But we must know where to obtain information and how to set other people to work for us to obtain that information because without it we can easily increase costs unnecessarily.

And finally I come back to the whole economic approach. I feel so strongly that architecture should result not in spite of, but because of, the economic situation and the general approach which the present day requires. From that should emerge good architecture, which I think we are achieving, comparable to that which many of us admire in the past.

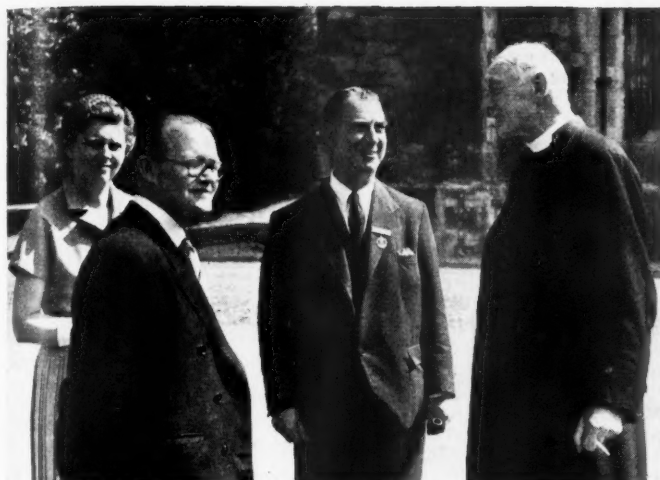
**Dr. Martin:** I think the papers do reflect the developing pattern of the profession and I see three distinct elements:

1. That group of work which deals with research. There are very few architects working in this field but their work is immensely important and this Conference should offer them strong support. They are pioneers.
2. There are the general practitioners; people like myself, in public offices, and also private architects, but all working on broad programmes of work. I expect those people to be aware of research work that is being done and to be interested. But their main function is to develop experimental work in the field; to look into questions of the economics of building and to spread that information through the profession.
3. Those private architects who are working for private clients. They are in the very fortunate position of being in very close contact with their clients. I wouldn't expect that kind of practitioner to be tremendously interested in the details of research work but if a practitioner of that kind was asked to design a hospital ward I should expect him to know where to go for the necessary information.

Therefore I don't think we ought to get confused about this question of the supply of information to the profession as a whole. What is necessary is that knowledge should exist and that people should know where to go for it. When they go for it they may have to work hard for it. It isn't a question of receiving information through the post. You must work at a subject if you want to understand it.

If we had had study groups at this Conference—and we may have to have them at future Conferences as the subjects get more serious—I should have suggested three: one of research workers, one of private and official architects working on programmes, and a third of private practitioners dealing with individual problems.





At the Garden Party: The Bishop of Norwich, Dr. P. M. Herbert, with Mr. C. D. Spragg, his secretary Miss Sankey, and Mr. H. R. Williams, Chief Clerk, R.I.B.A.

Mr. Paul Mauger [F], President Essex, Cambridge and Hertfordshire Society of Architects, and Mr. Charles Saxon, Vice-President R.I.B.A.

That I think should set the pattern of our discussion.

**Mr. George Grenfell Baines** [4] (Preston, Lancs.): Perhaps some of the delegates may be interested in our experience of using cost control, by analysis and cost plan, as part of the design process.

Though only short our experience has already shown the value of the methods described by the speakers, and initiated largely, I believe, by the Ministry of Education. We have also found the ARCHITECTS' JOURNAL helpful and consider that valuable work has already been done, and can still be done, by the building Press generally to publicise results for the whole profession. Time is short, and as this is an important matter, we came to the decision, only last week, to extend our experience even beyond the work of the ARCHITECTS' JOURNAL by circulating a number of architectural organisations, official and private, offering to exchange our cost analyses privately.

As comparison is such an important process in designing to cost, we find it important that figures published generally should be exactly correlated. To reach the same basis firmer definitions of what comprises an element are necessary, otherwise comparisons can be misleading. Different systems of construction can make definitions difficult, different methods of planning can do so too; for instance, there is quite a difference in the work below ground, and roof elements in single or multi-storey developments, and so it is often helpful to compare combinations of elements in the cost plan. One useful combination is—work below ground, frame, floors, roof, cladding and windows; what may be called the 'shell'. Then floor finishes cannot be considered apart from the necessary preparation work, as screed, and these can also be affected by housing of services within the floor when arriving at the most economical *all round* solution. On one job, our structural design involving slender mullions at

frequent intervals resulted in an 8 per cent contribution to the cladding if only the verticals were exposed, while to expose the horizontal members gave a further 12 per cent. Naturally these economies had to be weighed with the resulting appearance, but in these days when frames are being wrapped up in expensive claddings, duplications need careful watching.

I think the most difficult process is that of detailing within the cost plan. In drawing up a cost plan with the quantity surveyor there is a real danger of the sketch plan, wishful thinking mentality developing. To keep the final details and their implied costs constantly in line with the cost plan, involving innumerable adjustments up or down in this and that requires the continuous joint effort of architect and quantity surveyor. For this reason we find it invaluable to have our own quantity surveyors in the office, acting as co-designers and enjoying equal status. So I cannot agree with Mr. Nott that the quantity surveyor can retain his own office with the 'gen' in his files. We have found our 'outside' quantity surveyors very helpful and really interested in the idea of cost designing as a creative process to brighten their work, but the process of communication is too involved.

As I said, time is short and I hope that this Conference may start the freest exchange of information, by both public and private channels, subject of course to clients' agreement. I was particularly pleased that Dr. Martin emphasised the importance of studying functions as a sure way of improving design. His demonstration of the Nuffield Research Group 'short stroke ward' as an improvement on the earlier 'long stroke' Florence Nightingale ward reminded me of a very useful recent experience of using the B.R.S. house and housework research. We concluded from a study of their movement plans and statistics that it would help housework to provide a complete circuit in the middle of

the plan, changing the housewife's 'piston-like' reciprocal movements in and out of rooms to a more efficient rotary track. I have been told tests seem to show the idea works.

Dr. Martin made it clear that the fruits of research will not fall into our mouths. It is not easy to translate them into design; there is a temptation to say 'so what?' when confronted by masses of facts and figures, and from 'so what' to 'know how' is a tricky step involving detective work and hard thinking. But the brilliant work of the Nuffield Group on hospitals shows that using research pays.

I could not follow Dr. Weston's figures of £285 for the maintenance in the life of a house—what life has he allowed? Most authorities are finding it impossible to maintain for £10 per annum, and on a sixty years' life that comes to more than a third of the original cost. We were told the other day by the Ministry of Works that a third of the building industry is engaged in maintenance; these figures seem to agree better. Perhaps I have not understood him fully, and he may be interested to know that one of our industrial clients will not spend more than £4,000 to save one man's work.

Maintenance costs go farther than those of the financing authority. Some time ago in one of our large housing projects we were forced midway to reduce flooring specifications to save capital cost. The new tenants complained it was costing them 1s. 10d. per week in polish and cloths to clean the floors. They would have been willing to pay 1s. 0d. per week more rent to have had floors like the original houses. At the rates of interest and repayment then prevailing this represented £65—the better floors would have only cost £35; obviously we had made a false economy. The lessons here are that it is easy to make false economies on floors; finishes and running costs must be considered in combination, for example heating is not merely a matter of fuel consumption, but this and cleaning

costs; solid fuel is notoriously more dirty than oil or gas.

I am far from convinced that some of the costs involved in providing flexibility are justified. Has Dr. Weston conducted any research where money has been spent procuring flexibility to find if it has been fully used and really pays? One of our clients for a large office building recently stated he could move people more easily than partitions; his plan for further extension was to leave adequate site, then when necessary, build to remove one complete department, redistributing the remaining staff. Others may find this example useful. We have provided a plan with mullions at suitable centres for dividing up floor space 'just in case'.

We do not take off 'elemental bills'—I don't mind the term myself—but our quantity surveyor uses a large abstract sheet with various headings under which he builds up the cost of elements when arriving at a cost analysis. Is it not possible for the builder's estimator to use a similar device to take him back in the opposite direction when pricing a bill drawn up in elements? I rather think so, and feel that the difficulty mentioned yesterday will soon be overcome.

We are finding that our cost analysis makes a good basis for estimating progress and now issue our clerks of works with the elements expressed in percentages; from these, by his estimate of the percentage completed he can build up a realistic assessment of how far the job is complete. Before long we can see this leading to more realistic interim valuations with less trouble for the quantity surveyor which will repay him for the work done in the cost design stages.

Finally, there is another aspect of Architectural Economics, the link of which to this Conference may be tenuous, but it is so important, and as one of our speakers is Chairman of the Public Relations Committee I hope I may be allowed to mention it—the education of our clients. All the speakers have started a valuable work of educating us and have rightly recognised that the essential beginning of education is to create interest. All of them have emphasised that architecture is a natural product of the economic and social conditions of the age in which it is created. After I had discussed this at great length with my old boss, that great man A. J. Hope, he agreed in the end, saying, 'But you know, Baines, they aren't going to think this was a very good age'. As I look round at the quality of building in other countries and see what proportion of their resources they are prepared to put to fine building, I wonder if our country is worthy of the best architecture. We work for clients who have international interests and it is sometimes depressing to notice the distinct differences between quality and cost of the same facilities in Europe and their counterpart here.

Mr. Jefferiss Mathews has used the words 'within the economics'. Dr. Weston speaks of 'the planning and functional restraints'. Without a realistic relation between economic restraints and planning and func-

tional restraints—too often not restraints but wild ambitions—it is all too easy to fall into wishful thinking, a very expensive disease to cure. Our clients have no clear idea of the cost of building; last year at Harrogate I asked that a regularly maintained Cost Information Service should be set up, but is it surprising that clients have little idea when architects also are not sure of themselves? We have found that by getting down to cost analysis we have earned the respect of clients, gained their understanding, and actually got them to spend more money because they were able to see what they were getting.

Economics are not immutable and so while we continue to do our utmost to work within the existing framework we must press on with the work of persuading society that good building pays. To paraphrase the car advert, you don't spend on building, you invest. It is good advertising, the best I would say, to have a good building. Now that the Design Centre is well established I do hope that Sir Gordon Russell and his colleagues will turn the heat on good design in the building industry—they could be of enormous help. But we can help ourselves, particularly in the Allied Societies, by our public relations work, to see that people are inspired and enthused to put their resources to the worth-while object of better building. Our clients used to be patrons, now they are partners and we don't want them to be sleeping partners at that. We must educate them. But first we must educate ourselves, we must be at least one lesson ahead, and we have already found that the study of cost analysis and planning can be a valuable addition to our capacity to do our job as architects, that is to control design.

One speaker yesterday said 'go to the builder'. That is good advice up to a point.

For me this Conference has started—no, given added impetus to—a development in my education. The papers provide the first pages of an 'economics section book' to which I hope to turn as naturally as I now do to the structural steel section books; it has I hope started new collaborations between architect and quantity surveyor, and could start new and more realistic collaborations between architect and better informed and therefore more understanding client-to-be.

**Dr. Weston:** On the question of the present value of one pound per annum: the choice is, do you spend money now or over the years? If capital is spent, presumably it will be necessary to obtain a loan and the equivalent capital value is merely that sum of money on which you can pay interest and repay the capital over the period of years by the given annual expenditure. As an example, for a loan at  $5\frac{1}{2}$  per cent, a payment of £1 per annum will repay a loan of £12 and the interest over 20 years. An expenditure of £12 is therefore justified if thereby a saving of £1 per annum can be made.

On the question of how far the elemental bill should go in breaking down into individual elements it is clear that the farther



Mr. S. Rowland Pierce [F] and Mrs. Pierce [4]

the breakdown is taken the more difficulty there is in distinguishing between one element and another. There is thus some advantage in taking fairly broad elements. If the total is broken down into around twenty elements that is probably as far as we ought to go at the moment.

An interesting application of cost analysis has been provided by one of my colleagues, C. M. Craig, who recently published a paper in the R.I.B.A. JOURNAL giving the results of a survey of the prices of high flats. This provides a useful example of the type of results which can be achieved by this approach.

**Mr. P. V. Burnett [F]:** I am in private practice in London.

Mr. Grenfell Baines's client who spends more abroad than in this country ties up with the question of income tax and purchase tax. It is difficult for a client to raise capital now, and if he uses flimsy materials there is the point that maintenance and upkeep are allowable for tax relief.

Secondly, when considering the economics of building, we have so far considered only the actual cost of building, but there are other factors—the cost of land, ground rent, the rental value of the building. All these come into the total cost. There is, moreover, the cost of legislation. Take, for example, an office building. First planning consent has to be obtained and this, with planning complications, may take four months. Then there have to be working drawings prepared and formal consent obtained, and another four or five months goes in this. Then other consents have to be applied for under the London Building Acts. Suppose the site has a ground rent of £400 per month, and my client has to wait eight or nine months before he can begin to build, that means he is incurring an expenditure of £3,500 which is quite unproductive. Suppose the building has a floor space of 50,000 sq. ft., that means 1s. 6d. per foot super on the cost of building. There is also the loss of rental value for the same period. Office space in London has a rental value of some 15s. to £1 per sq. ft. That means a large sum of money.

What it comes to is that a client considering building an office block in London today has to allow 10s. a foot super for the cost of legislation. I am not criticising the local authorities, but we have to face up to

the fact that huge overheads are being thrust upon our clients today and it seems a pity to go to all this trouble with cost analysis, trying to save 2d. or 3d. on one element when 10s. per ft. is being thrown away unproductively.

**Mr. A. G. Sheppard Fidler [F]**, City Architect, Birmingham: I belong to Dr. Martin's second group, those local authority (or private) architects concerned with long programmes which they can look at broadly. I have been concerned in Birmingham with such a programme, which is comparable to those being carried out in Liverpool, Manchester, Glasgow, etc. We have there a really fruitful field for research of the kind we have been discussing at this Conference. The difficulty is to do your own research. How many local authority offices can afford to run a small research group? It would be very valuable if large offices could be given guidance on certain points they might look for and which they can pass to B.R.S., the Ministry of Education or whoever is the head of the research organisation.

If you want to get collaboration with builders you have to pick your builders carefully. Some of them have not heard of the visit to America of the productivity team. But we have in Birmingham started a collaborative experiment by negotiation with a firm of constructional engineers working as contractors and a general contractor. It looks as though we shall save money through this collaboration. It is worth while carrying out this sort of experiment—like the L.C.C.'s at Picton Street.

Finally, although as architects we must of course be interested in building cheaply, don't let us therefore frustrate any hope of producing architecture.

**Mr. John Stillman [A]** (London): I should like to ask a question about the way cost analysis can help the architect in private practice who does not have a series of jobs of a similar character. Suppose, for instance, you are designing a community centre. Can you apply the results of cost analysis derived from, say, a school, to such a building, which is rather similar to a school but not entirely similar? We would like to start this business, but we don't know quite how.

If the answer to that question is no, would the elemental bill help? And if the quantity surveyor takes out the costs of elements, do you have to pay him extra?

We have had some bad experience with trying to negotiate with contractors. They all seem so busy. And in one case I asked a contractor to help me with the designing of a house from the early stages and he asked me if I was qualified!

This cost analysis does seem to presuppose that builders tender logically for buildings and that tenders will match up in each case. But is our experience such that we can say there is some rational and logical basis for tenders? If not, the system doesn't seem to hold water.

And finally, though I think it is marvellous that we have got some work going on cost analysis, isn't there some other way than cost analysis of achieving the same purpose?

**Dr. Weston:** We should be quite clear about the relationship between cost analysis and elemental bills. They are merely a way of facilitating cost analysis but are not essential for it. It is possible to base cost analysis on a bill in its ordinary form, but obviously extra work is involved in relating the data to the individual elements.



**Mr. S. T. Walker [F]**, President of the Birmingham and Five Counties Architectural Association, and Mrs. Walker

Cost analysis can help in predicting the cost of a building that is only somewhat similar to another one. In fact it would be difficult without cost analysis to approach the problem logically at all.

There are many factors which govern the price entered in a bill. Some of these are strictly related to the circumstances of a particular job, the plant available, productivity of labour and so on; others are rather more uncertain. For example they may involve policy decisions on the part of a firm and general uncertainties in estimating. For that reason it is unwise to rely on data from a single job, and cost planning should, as far as possible, be based on a number of schemes.

**Mr. A. W. Cleeve Barr [A]**: I have been development assistant on housing to Dr. Martin for several years, and I should like to develop two points he commented on: namely, relations with quantity surveyors and relations with contractors.

Under the first heading, I should like to say first that there are a great variety of forms of cost investigation which can be attacked jointly with quantity surveyors—our own quantity surveyors dislike cost analysis, they think it is over-emphasised. On the Picton Street job, for instance, we didn't follow quite the type of organisation laid down by the Ministry of Education, because on housing work so much is already known about the cost of individual unit dwellings. There is far less fat that can be pared away than in schools. The unit has been pared down over a number of years. We therefore worked on the basis of breaking the design down into component parts and investigating ways of constructing each component.

Secondly, 99 per cent of quantity surveyors regard bills of quantities as ends in themselves—rather as some architects regard drawings. We must rub it in that what we want from them is not beautiful bills but sound economic advice. And we must make them realise too that when they find they can perform a creative part in design, and not just a mathematical function, they will also get a new joy out of their work.

Thirdly, when we have a team the architect should be in charge. Otherwise what



A garden party group which includes (left): Mr. J. Nelson Meredith, Mr. Leonard G. Hannaford [F] talking to Dr. Herbert, and Mr. David Percival [A], with their wives



you get won't be architecture. It must be borne in mind that this cost information is only to enable the architect on behalf of his client to decide between one thing and another; not necessarily to decide for the cheapest form.

And here I would say that Dr. Craig's paper is admirable in every respect except one: the cost limit for multi-storey flats is fixed at a ridiculously low level when it is given as 48s. And that is unfortunate, since it is put out by a Government Department. We have tried hard in the L.C.C. but haven't got it below 60s.

Fourthly, it is the quantity surveyor's and not the architect's job to do the cost investigation. The whole thing is too complicated for the architect.

Fifthly, it is important that the quantity surveyor must be a working member of the team if only for a few weeks. This will be much more satisfactory than having letters going to and fro and in that way he can keep in touch with what is going on. He can see the actual drawing boards. It is not worth his while spending hours on calculating alternative plumbing systems with a saving of £3 a flat if meanwhile you are going in for a fancy roof structure that adds £50 per flat.

To turn now to our relations with contractors, we must not forget that they also do not know all the answers. On the first mixed development scheme for the L.C.C. at Wimbledon we invited at the design stage comments from three contractors on the best structure for point blocks. One firm was convinced that steel frame was best, the second concrete frame and the third load-bearing concrete walls. They might each have been right within the limits of their own organisation. On the second scheme we approached six contractors, three of whom were prepared to co-operate at the design stage. One was for a system of load-bearing walls with sliding shutters on the Swedish pattern, the second one wanted reinforced concrete frames designed by his own engineer and the third was in favour of a different kind of frame with different kinds of cladding. We should have had to produce three different sets of working drawings for three designs and then would have had to compare tenders when we got them in.

So we came logically to the Picton Street idea of one nominated contractor. And on this job we have saved so much money that before long I am convinced the contractor will be paying us for doing it! The really satisfactory thing has been the chance of discussing with the builder at the design stage a number of alternatives. We have rejected more than have been accepted.

And this leads me to this conclusion. If one is going to employ a nominated contractor, how can one guarantee to one's client the most economic result? It seems to me that the R.I.B.A. or the B.R.S. might do immediately a study of what forms of contract are going on at the moment in the offices, say, of Mr. Sheppard Fidler at Birmingham, Mr. Ling at Coventry and other authorities. Under our present economic system free competition is the principal means of ensuring to the client the most economic result. Within that

overall field there is room for a large percentage of nominated work where methods can be studied by architects and contractors jointly. There are other forms of contract which facilitate this, but more needs to be known.

May I hope that the R.I.B.A. will extend the work of the Joint Consultative Committee and bring in a number of its junior members. In recent years I have done some work on R.I.B.A. committees, and whether I am timid I don't know, but the whole institution at Portland Place has a soporific effect on me. I feel that the Council takes its responsibilities so seriously that nothing comes out unless it is absolutely gilt-edged. I feel there is a lot of room for the expression of opinions which need not necessarily carry the weight of the Council of the R.I.B.A. Before the war there was some sort of Junior Members' Committee. We need some further method of study groups or junior members of committees or something in which the younger people—not necessarily physically younger, but mentally—could take part.

**Dr. Weston:** The target which is suggested is based on current performance and to quote the actual paper, 'the price of 48s. per square foot net has in fact been improved on already in several of the lower blocks and approached closely by some of the higher blocks, including several with central heating'.

In fact nearly half of the blocks included in the survey cost less than 60s. per sq. ft. net. The importance of these figures can be gauged from the fact that if prices in the range of 70s. per sq. ft. net could be reduced only to the cost of the average, a saving of £250 per dwelling would be made. If however the present average could be reduced to the target of 48s. a further saving of up to £450 per dwelling could be realised.

This survey showed in fact a very wide range of prices; from under 50s. per sq. ft. up to nearly 90s. per sq. ft. net, although the figures all related to local authority dwellings, nominally providing the same standard of accommodation.

**Mr. N. Tweddell [4],** Chief Architect Basildon Corporation: I must say I find the bill of quantities in its present form a stumbling-block. I hadn't realised the elemental bill was actually being tendered on. As I see it the whole process of erecting a building can be divided into three stages: first, there is the design-cost relationship, the research problem, etc. I agree so much with everything that has been said on this that I can't elaborate in any way. Secondly, there is the problem of getting the prices in for what you have designed and lastly there is actually getting the building up.

I have had very great difficulty in getting what I thought was a good price on the orthodox bill of quantities. I have taken a lot of trouble to do the best design I could and have been collaborating in a mild way with contractors. But when the tenders come in you find that the orthodox bill has become a barrier between you and the

contractor. You are talking different languages. I hope the Institute will do all it can to sponsor the development of elemental bills on its appropriate committee so that even if we can't scrap the present bills right away we could develop an alternative method of tendering which would be more appropriate to specialist types of buildings. I have no doubt that for most of the building carried out in this country the normal bill of quantities will always be necessary, but the ordinary bills do not allow correct collaboration between architect and builder for specialised buildings.

Obviously collaboration can't be taken too far. In my office we do collaborate with contractors and initiate tenders for special jobs, but I couldn't run my office on negotiating or collaborating on every contract. We must remember the time and the staff aspects, and this would cut across competitive tendering. By and large competitive tendering stands, and collaboration must be the exception rather than the rule. But there is a need to develop another method of collaboration which enables the architect to remove the barrier of the orthodox bill between him and the contractor, and enables the contractor to see what the architect is talking about and to give him a price accordingly.

We should look upon this as a long-term job. What pattern do we want the industry to have in ten years' time? We want to do some preplanning ourselves about tendering and contract procedure.

**Mr. R. Llewelyn Davies [4],** Director of the Division of Architectural Studies, Nuffield Provincial Hospitals Trust: I am one of Dr. Martin's first group, the research workers, and I want to speak about one or two of the problems facing us.

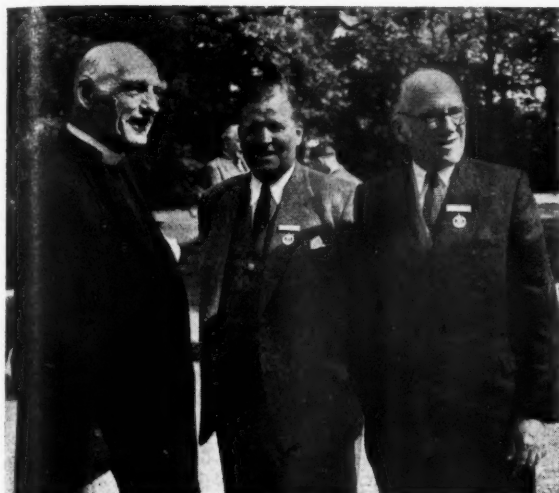
This is really the problem of knowledge in relation to the practice of architecture. What we need in order to control cost is increased and better knowledge of all aspects of design. The appeal for analysis, for planning, for production of better and more efficient and therefore more economic building and the appeals for the control of cost in design and on the site are aspects of the general deepening and broadening of knowledge which is vital to our profession today.

In present circumstances this knowledge can only really be developed by specialist bodies, and by teams which include not only architects but members from the sister professions.

The existence of centres of research is already well established in many other professions but it is a rather new facet of the professional life and organisation of architecture. In other professions they are generally to be found in the universities and the people engaged in working on them are often also engaged in teaching. Mr. Jefferiss Mathews said we as a profession should sponsor and initiate these studies. I agree, though I think we should note that the organisations already in being were not in fact originally sponsored by our profession. I hope that this pattern will change.

The two problems we have to face are:





Dr. Herbert with Mr. Humphrey Boardman, President Norfolk and Norwich Association of Architects, and Mr. C. H. Aslin, C.B.E., President R.I.B.A.



Mr. Lionel Smith [4] and his daughter, Miss Virginia Smith and Mr. Eric L. Bird, M.C., M.B.E. [4]

recruitment of the right type of architect to carry on the work and to give leadership, and the dissemination of the material in the right form to practice. We have a lot of trouble in finding the right kind of man to take part in and lead research teams. We must recognise that the present training of architects is too tightly built into the conception of the training of the general practitioner. We need a few back-room boys. We aren't really training them. We need more facilities for post-graduate work. We of the Nuffield Foundation have tried to staff the architectural side of our research teams with post-graduate students. We have two post-graduate fellowships and our aim is to produce not only books and papers but men who can go out and take part in other teams.

The dissemination of this information back to the profession is of tremendous importance. We don't feel we are doing it well enough yet, and one of the most useful results of this Conference would be if the profession as a whole could give us help and guidance on how they would like the material given them. This sort of work is very dependent on constructive criticism from practising architects.

**Mr. Bryan Westwood [F]**, Immediate Past-President Architectural Association: I want to say: do not let cost become such an obsession that you don't know how to spend money! When I was a student in the A.A. Rowland Pierce once looked at an unimaginative piece of design I had produced and said, 'You blighters! If you had a fortune you wouldn't know how to spend it!'

We have been to Holland with the A.A. recently and we were astonished at the amount of money Dutchmen spend on their offices—though one of our party pointed out that Dutchmen spend twice as long in their offices as the average British business man! Anyhow we asked a Dutchman and

he said: 'I spend half my time in my office and don't want a slum. Some of your English hotels and other buildings are nothing but slums.'

As far as statistics are concerned, we shouldn't forget that delay in putting in bills costs 5½ per cent. So far as the 48s. for housing is concerned, it is interesting to compare the attitude of the client in Italy in connection with public housing schemes. We were shown block after block where there was a really pressing housing problem and where they had set as the goal as many people as possible housed in durable shelters. They did not have all the fittings. We said that if they didn't put in the fittings and finishes surely the tenants would do them in such a way that there would be a terrific amount of maintenance, but the reply was that in Italy in 21 years the house belongs to the tenant anyway, and moreover the ordinary Italian is very capable of putting up decent shelves. Of course that makes a big difference. It would be interesting to know what proportion of our 48s. goes in cupboards, shelves, fireplaces, etc. None of these was in the Italian houses. There the builders simply leave you a hole in the wall for you to fix your own fireplace.

I now propose to sing you a little song. This song is statistical. It was sung to me by my small daughter, aged seven.

'Why doesn't my goose sing as well as thy goose  
When I paid for my goose twice as much as thine?'

The answer lies in the vast experience of Mr. Jefferiss Mathews, the statistics of Dr. Weston and the all-embracing grasp of Dr. Martin.

**Mr. H. S. Howgrave-Graham [4]**, Chief Architect, Crawley Development Corporation: I should like to speak about the follow-up to the Conference, which I

mentioned after last year's. The particular Committee on which I serve only had to deal with one aspect of it, and you would be astonished at the number of difficulties which were put in our way. The subject—the cost of planning appeals—has been touched on again today, and we should be very grateful for information on that. We ought I think to give a time limit for the report on the follow-up, and I think it would be a good thing if results were to be produced and published in the JOURNAL in time for the next Conference.

The things that appear particularly to require study after this Conference are:

1. The form of the bill of quantities. There might be a danger of losing sight of the primary purpose of the bill, which is to save a number of people an enormous lot of trouble in working out the cost of building. Therefore discussion must take place with the people who are going to use the bill. How are you going to use information which someone has worked out for another purpose? It may not necessarily be the right answer to scrap the existing bill and put another in its place which is designed for something else.
2. Drawing office procedure. This might be studied with a view to reducing the cost in time. This is allied to the question of the bill. It may be that when you study the bill objectively you will find that a good deal could be shown by slipping in drawings and reducing words.
3. Education. This is vital. My own training on the subject of finance was not elemental but elementary. That is probably still the case today. When you talk to people who deal a great deal in money matters you find your vocabulary is limited. It is vital that we should be able to talk to our clients in the language they use.
4. Research. How it should be disseminated.
5. The Conference itself. We have had some first class discussion today. It has not always been so. Sometimes we are shown

the fox but the hounds seem to find a tree! We should consider whether we should give more time to the serious side of the Conference against the more frivolous aspect, and whether that should be done by means of study groups during the Conference or as a follow-up.

6. High flats. A visiting architect from abroad said to me how delightful were our two-storey houses, but he could not think how we could afford them. I said, 'We can't afford high storey flats'. He shrugged his shoulders and said, 'I don't understand it. In my country flats are cheaper than houses; four storeys are cheaper than three; ten storeys are cheaper than four.' Even if there was some exaggeration there, there is a tremendous field open to us to derive benefit from this continental method whatever it is. It must be a very different one from ours. I don't know to what extent B.R.S. have investigated this.

**Dr. Weston:** On Mr. Howgrave Graham's last point: we are making a close study of continental experience. The difference in price between two- and ten-storey blocks that exists here is certainly much less apparent on the continent.

**Lieut.-Colonel Leslie K. Watson, M.B.E., T.D. [F]** (London): I should like to say a few words on the method of putting information across when it has been ascertained by the back-room boys. I was sent a copy of a book about hospitals by the Nuffield Trust to review. I was enormously impressed with that production and I think the authors of it can rest assured that they have done all they could do to give their information in the right form for architects to use. I only wish that similar studies could also be carried out around other forms of building.

When a private architect is faced with a new commission his client nearly always wants to know some idea of cost pretty quickly. The result of that preliminary investigation probably decides what sort of thing they are going to aim at. What do we do when we are given a new type of building which we have never tackled before? We may have a good system of filing, of entering well-illustrated buildings in the journals, but some are only illustrated—and produced—every two or three years. That means costs have already become out of date because of the change in the value of money. It is also quite likely that the cost has never been given. I should like to ask the editors of architectural journals to make a point of putting in the cost per foot super and the cost per cubic foot.

I believe there is also a need for another type of architectural publication—an annual book which will give records of buildings much more briefly than is done in the ARCHITECTS' JOURNAL. In perhaps about two pages you can tell an architect all he wants to know about structure and finish and cost as well. The cost would have to be amended each year. If that could be done it would be a very great help to us all.

**Mr. C. A. R. Norton [F]** (London): Today

is seeing the advent of automation, and what I can't see is how you can expect a man to work on a wet and dirty site when he can sit in a factory and press buttons. Therefore there should be research into the problem of factory prefabrication and site assembly.

**Mr. W. A. Allen [A]**, Chief Architect Building Research Station: We have just completed arrangements at B.R.S. to carry out over the next two or three years a programme of research on factory design and construction. I should like to acknowledge the enormous help we have had from the people in the Midlands and Regional Industrial Boards in the Midlands. We hope in the next two years to be able to follow in the footsteps of Mr. Llewelyn Davies.

I should like to ask Col. Watson whether he does not find the cost information given in the ARCHITECTS' JOURNAL a fairly complete record of the buildings published there. I think it was quite a useful step for them to introduce that form of questionnaire which they have adopted.

I hope Dr. Martin will reply to Mr. Sheppard Fidler's question whether it is practicable to introduce research teams into local authority offices. I should have thought they could make a cast iron case to afford them. They have, generally speaking, got structures capable of carrying this sort of thing within the financial administration of the local authority.

On Mr. Llewelyn Davies' point about carrying out operations inside the R.I.B.A., I should like to say that we have got to learn to develop these over the next few years if we are to carry out in the profession the rapid changes that are needed to strengthen our position to cope with the changing volume of work we want to bring into our hands. We must operate not only the committee structure but some kind of technique of carrying through a bold programme, which has the general support of the profession, of actually passing on information rapidly. The Science Committee has been doing something along these lines, but it is localised in the London area. We have to do it more broadly. For instance, there is the improvement of the training system so far as economics are concerned that we have been discussing. The process of passing that on through the R.I.B.A. to the schools, part-time students and so on is an operation which is extraordinarily inefficient mechanically, and I don't know how it is going to be done; but it has to be done and done quickly.

**Mr. R. Baden Hellard [A]**: Two points that have been made by previous speakers are that negotiating a contract is all right on very big jobs and the possibility of putting in drawings with bills.

We have done some small jobs where we have collaborated with the contractor on a negotiated contract and have used elemental drawings. These had both advantages and disadvantages. We found that in our own working drawings they have speeded up the production of the information the contractor requires, and helped us to focus our

thoughts on the element we were considering. We try to complete and schedule all items connected with one element together. We think this is a considerable help to us because the points we are thinking about at the time can be dealt with in relationship to other elements, and we were able to produce a simpler working drawing.

But unfortunately we found the builder didn't agree with us. He found that the estimator was missing things and collating points from one element over and over. The trades foreman on the site too had difficulty in reading the drawings. I came to the conclusion that the average trades foreman has never had a course in drawing interpretation. When faced with something logical and simpler he has no basic knowledge to fall back on. And far from the time spent on early jobs and explaining working drawings being reduced, we had to spend more time explaining the drawings to the operatives. In short, it is no use educating ourselves only, we have to educate the trade foremen too.

**Mr. Arthur Ling [F]**, City Architect and Planning Officer, Coventry: I want to make two points: first, on the dissemination of information. I am trying to set up a research and study group in my office. I find it difficult. First, we can't get the kind of staff that are needed; they are too few in number. Secondly, there is nowhere we can go centrally which will give us the advantage of all the work which has been done up to now. We are having a sample room and a library of references—which of course raises the question of an index. But I am appalled at the thought of all the people who will be covering the same ground as each other. Michael Ventris, who holds a Fellowship from the ARCHITECTS' JOURNAL, says he finds lots of people have ideas about what they want to do in this field but don't know how to start. In London one has the advantage of various centres, but outside London it is very difficult to get to a centre easily. If our office is really to develop a research centre there seems no reason why it shouldn't serve other architects too in the surrounding area. At the moment private architects have to see representatives, or come to London or to various manufacturers' showrooms. It seems to me the Building Centre might have a contribution to make here by setting up provincial building centres in association with local authorities. Much of course would depend on the size of the local authority and of the area served. The problem might be looked at nationally and also in conjunction with the Allied Societies.

My second point is preplanning. At the moment we can't do much because we have so little time. One thinks at once of education buildings, where the programme for the year ahead is given to us and confirmed by the Education Officer and the Ministry of Education only a few months before the year begins. Particularly now that the Minister has asked us to take in a 3 per cent—and we think it will be 6 per cent—



At the Civic Reception: The President R.I.B.A. The Secretary, R.I.B.A., and Councillor Arthur South, Lord Mayor of Norwich



Mr. C. H. Aslin with Mr. J. Fletcher Watson [A], Mr. J. Gordon Davies [F], Vice-President of the Norfolk and Norwich Association of Architects, and Mr. Humphrey Boardman [F].

increase in the cost of labour and materials and offset that with building economies, I think we should ask for something from him in return, and should ask to be given the programme two or even three years ahead.

**Dr. Martin:** To deal with Mr. Allen's question: we should be careful how we use the word 'research'. I shouldn't like to see the term denigrated. It should be used for the basic work done by specialists. It is very expensive and it has to be carried out very thoroughly. The work that can be done in public architects' offices is not actually research work at all. What we can do is development work. We can know where research work is being done and see that it is applied in practice and study the results.

So far as the costs of study teams go in public offices, they can be justified over and over again. We have proved that.

**The President:** I think this has been a most admirable Conference. We may not at our Conferences arrive at definite conclusions, but we bring to the minds of the people who come some really important problems. You can be sure that all those raised here will be investigated.

With regard to Mr. Ling's troublesome education people, I must say I have thought them the best ever, because we in Hertfordshire know this spring what we are going to do next year. Perhaps it takes longer for information to filter through from Curzon Street to Coventry!

Someone said we ought to have drawings in bills of quantities. I do not think we want to go too far with that.

**Mr. Howard V. Lobb, C.B.E. [F] (London),** proposing a vote of thanks to the speakers, said: I have very great pleasure in thanking Mr. Jefferiss Mathews, Dr. Weston and Dr. Martin for their papers. All those of you who have been to a series of these Conferences will, I am sure, agree with me that this one has again made a very real contribution to our thought on techniques. I feel we have at least opened a door

that will lead us to giving better value for money. It is now up to us, at Portland Place and in our own practices and in any way we can, to help in disseminating and exchanging this information we have been talking about. This may sometimes have to be done confidentially, because it may well be that on some jobs our clients would not care for details of cost to be broadcast. But with whatever reservations we feel are necessary, we must help in disseminating information. Then we shall be going a long way to giving better building and better architecture.

I should like to pay a very warm tribute to the L.C.C. for the way in which they have, through Dr. Martin, pioneered in this. Those of you who took part in the symposium on high flats will know that they pioneered in research on this subject, and the way in which the results have been made available to the profession shows the kind of pilot scheme some of us have in mind.

**Mr. D. E. E. Gibson, C.B.E. [A],** County Architect, Nottingham: It gives me great pleasure to be able to second the vote of thanks to our three speakers this morning. It is my guess that the subjects of cost study and cost analysis are not always universally enjoyed by all our professional colleagues. At the present time a very large proportion of the building money is coming from public funds and is therefore more and more subject to scrutiny as to how it is being spent.

I can instance a public authority where out of twelve schools commissioned from different architects, in three cases the tenders were approximately £20,000 in excess of the target whilst in another case they were very much below the Ministry's permitted figure. In the three cases where the cost was too much there was a desperate slashing of finishings, whilst in the other case there was a request to the Ministry to allow brickwork to be plastered and so on. It is quite obvious therefore that we must all have been most interested in

listening to our three speakers and assessing in what way we could profit by their advice.

In my own case, which may be typical of a number, we not long ago endeavoured to set up a section dealing with cost analysis. We found that people with much experience in this field did not exist and we therefore had to call in our own quantity surveyors to help with this work. The results are proving to be most satisfactory and they are taking to the new approach like 'ducks to water'. I think there is every reason to keep the closest association between the quantity surveyor and the architect during the early stages of the development of a building project and that there is as much need for initiative from the architect as from the quantity surveyor in this matter.

With regard to economy in building, there is one matter which I think calls for action at national level and I refer to over-insurance. This has happened in mining precautions where building houses in pairs on mining rafts probably involves the greater use of money and manpower than would be called upon to put right the odd buildings which would suffer damage. It also applies, in my view, to such matters as fire precautions where in connection with stage licences all sorts of expensive stage arrangements are necessary on the basis that up to twelve performances a fire will not be expected, but from twelve performances onwards a fire might easily happen. With modern fire equipment and up-to-date requirements for electrical installations, it is doubtful whether the high cost to give fire protection to steel frames in schools, for instance, could be justified.

My real purpose in standing up on the platform at this moment is to second the vote of thanks which has been so ably put to us all and to remind us that our three speakers have probably spent several evenings and week-ends at their homes and elsewhere working up their papers in order that we may have the subject-matter so easily presented to us and I am quite sure that you will support me in this vote of thanks.



# The Conference Dinner

At Samson and Hercules House, Norwich, Friday 1 June

## The President in the Chair

**Mr. F. Charles Saxon, O.B.E., M.C., F.R.I.C.S., Vice President R.I.B.A.,** proposing the toast of The City of Norwich: The success of any Conference depends not only on the papers we hear and the trips we make but on the reception we have in the place where we meet. Many have been here before and I expect we shall all come again. We come because as architects we have a love of history and art and architecture. We like to see the work of our contemporaries. In Norwich we have got the ideal place.

I think the architect is trained to get over a lot of difficulties, one of them being this problem of economics—how to get a quart into a pint pot. Knowing this wonderful city, that is what I have to do tonight.

We have been given a number of booklets telling us all about the city, about its history from the earliest days—I won't mention the Saxons, who built round towers because they were too lazy to cut stones square. It is a delight to wander round this city and see the architecture of all the different ages: not least the Cathedral. We were privileged yesterday, by your kind assistance, My Lord Bishop, to see it and to attend Evensong there. What a thrill it was. We wondered at the prodigious amount of inspiration and devotion which had gone into it. If that is the economics of building, that cathedral has earned its keep. It is good value for money. One can read the whole history of England in it.

Then again there is the Castle. History is written in every room. Norwich is not like any other museum where history and museum pieces are confined to the past. In Norwich it is brought right up to date. The same type of craftsmanship is visible.

Yes, Norwich is wonderful. And I now propose its welfare and prosperity.

**The Lord Mayor of Norwich, Councillor Arthur South,** responding: First I ought to apologise for not welcoming you at the beginning of your session. It was due to some interdepartmental troubles as a result of which I wasn't informed that I ought to have been there. Those of you who are associated with local government will have heard of Organisation and Methods. At the moment the City Hall of Norwich is undergoing an Organisation and Methods enquiry. But the City are very glad to have you with us.

The City of Norwich is well loved by all who were born here, who come to work here and live here. For over 1,200 years there has been trade carried on in some form or another here. There were the fishing settlements in the 6th and 7th

centuries, there was the busy period of the market towns in the middle centuries, and at the present time it is a large industrial and manufacturing town. Its fortunes through these 1,200 years have been varied. Many would say perhaps its most glorious period was the Tudor period when we were very prosperous owing to the weaving trade. It was in that time that so many of our churches were built and so many restored and rededicated. We lost that trade and it was a great set-back to the city. It finally left us in the early 19th century. We recovered when it was found that the native skill of the city could devote itself to the manufacture of ladies' and children's shoes. To this day that has remained the staple trade of Norwich and it is now world-wide.

There are others. There is a food manufacturing concern—Colman's. This family left to the city the treasures which you saw last night. There is the world-wide engineering organisation of Electro Motors. Some of your architects will have heard of Boulton and Paul, who send prefabricated houses and churches to all parts of the world. (It is a remarkable thing that so few of the prefabricated houses are established in Norwich!) There is the chocolate manufacturing firm of Caley's. I am also happy to tell you that a new industry is coming to the city; May and Baker of Dagenham, after travelling the length and breadth of the country, have decided to establish a factory here. It is a tribute to the younger architects among you that one of you is going to be responsible for the office block of the large factory.

Talking to people such as yourselves about the architecture of the city is rather difficult. You all have your own ideas about architecture. In fact you are rather like doctors—if you gather two together they have different opinions. We in the city are proud of the articles and photographs that have appeared in the Journals recently and it is right that, with a professional body such as yours, there should be some criticism. There is a lot wrong with the city and a lot we need to put right. We have done a lot of unfortunate building and I am sure that architects who have designed it must be sorry. Perhaps there will be an opportunity in the future to do something about it.

In the post-war period we are trying not to stand still. We have a population of 122,000 people. Six thousand houses and flats have been erected municipally and we have spent £7½ to £8 million on them. We have built 18 completely new schools and adapted many others. In a school population of some 18½ million children there are ten thousand in either new class-

rooms or newly adapted classrooms, and £2 million have been spent on building and adapting schools and furniture. So that in this comparatively small city we have spent £10 million in the post-war period on schools and municipal housing. In addition, 1,700 private houses have been built at a total cost of £2½ to 3 million, and also a great deal of industrial building has been going on.

The centre of the city is being almost entirely rebuilt. Some of you may not like it. Some of us don't like it. Often we are asked why we allow these monstrosities to go up. Sometimes we are asked why we continue to build neo-Georgian. Between the two schools of thought the city is trying to find its peace. The city does go on trying to unite the old with the new. We hope that we are making a fair job of it. We realise we have many treasures and we want to preserve them. I think it is up to professional bodies such as yours, in association with lay administrators, to help us to do it. Serving in local government for the many years I have, I know it is sometimes difficult for professional people to persuade lay administrators which is the right thing and which the wrong. I have often heard a city architect come to the local committee and implore them to carry out this or that scheme and I have seen him have all his case thrown down. Lay administrators generally tend to be conservative. So if our new aspects are a little dreary it is perhaps because the lay administrators haven't been quite so ready to fall into line with modern architecture. This can be put right if there is a more intelligent understanding of what your job and ours is in the community. I hope in the future in great cities such as our own there will be a more ready awareness of what our job is. For each of us must contribute something our children will be proud of when we are gone.

**Lieut.-Colonel Sir Bartle Edwards, M.C.,** Chairman of the Norfolk County Council, proposing the toast of The R.I.B.A. and its Allied Societies, said: My knowledge of architecture is very small, so that I feel diffident in speaking to you. I looked up an old encyclopaedia of 1802 to see the rules about good architecture. I saw that the three chief rules to be observed are Solidity, Convenience and Beauty. The definition of solidity was 'choice of good materials and foundations'. As a land owner I thought of all the farm buildings and cottages made of clay lump, wattle and daub and beams of timber and of how difficult it is to keep them in repair. But they were put up, of course, some years before your institution existed.

'Convenience' was defined as 'so ordering the parts of an edifice that they do not embarrass one another'. I take this to mean that a bathroom etc. should not lead out of the drawing room. 'Beauty' was defined as 'to assign to each part of the whole a form pleasing to the eye'. In these days of keeping costs down it is perhaps difficult to maintain always the beauty some of us



would like. I wondered whether any architect who was not present tonight might have been following the example of Sir Alfred Munnings, in your kindred art of painting, who refused to attend a banquet because he disapproved of modern painting.

In these days a great deal of building is either Government or local government building. It is therefore very fitting that the County Architect of Hertfordshire should be President of your great Institution, which has 16,000 members, and has spread all over the Commonwealth. The whole community owes you a great debt for the high standard you maintain.

**The President, Mr. C. H. Aslin, C.B.E.:** Sir Bartle said, as Chairman of the Norfolk County Council, that he knew nothing of architecture. I have always found that Chairmen of local authorities think they know more about architecture than I do! As he was bordering on making comments on modern architecture I wish he had been at the Cathedral with us yesterday, when the Dean gave us a dissertation on it. He thought that the whole tendency was good, with which naturally we agree.

May I say without offence to any of our friends who have been responsible for the work on other annual gatherings that I am sure this gathering has been the best we have had. The highlight has been the Lord Bishop's invitation to his charming garden and his allowing us to have a service in the Cathedral. We have tasted every side of civic life. We have seen the city, the country, the water.

Sir Bartle tried to describe architecture. It is a thankless task and one never gets it quite right. I have a daughter who sent me a Christmas card on which it said: 'There are three arts, sculpture, painting and pastry-making, of which latter architecture is a sub-division!' May I say thank you to Sir Bartle for his kind words. But please don't bother to delve into books to find out what architecture is. Just take the word of your County Architect!

**Mr. Humphrey C. Boardman [F], President, Norfolk and Norwich Association of Architects,** proposing the toast of The Guests: I should like to mention a few of the unofficial guests we have with us tonight. First, my mother, who in 1898 married an architect and became the daughter-in-law of another; secondly, the Chief Constable of Norfolk, who completes a long term of service at the end of this month, and who sometimes complains that we are off the beaten track of crime in Norfolk; and thirdly, Mr. Timothy Colman, whose father and grandfather between them built up the collection of treasures you enjoyed last night. John Colman was elected an Honorary Member of the Institute.

It is gratifying to know that Sir Ian MacAlister has us in his mind tonight. He was our Secretary for over 40 years. He has sent a letter of greetings hoping

that we shall have a happy function. We also have with us a senior member of our Association, Mr. E. H. Buckingham, and Mr. S. J. Wearing, our President in 1930, Eric Scott, our Honorary Secretary in 1930, and Theo Scott, our Honorary Editor.

I should like to thank all those who have helped to make this Conference a success, especially our Hon. Secretary, Mr. Tomkins. I must also mention in this category Mr. Spragg and his Chief Clerk, Mr. Williams. And then the Press—THE BUILDER, THE ARCHITECTS' JOURNAL, etc., for their wonderful editions. But I should like to appeal to them to show only the best of Norwich. And to the local Press I would appeal to give us sufficient space. Then I must mention Mr. Storey, our Town Clerk, who has been honoured with the C.B.E., and the Mayor of Thetford, and Lord Leicester, whose home many of you visited today, and also the quantity surveyors. A Norfolk man is Chairman of the R.I.C.S. this year. And our great friends the builders too are represented here by Mr. R. G. Carter, President of the Eastern Regional Federation of Building Trades Employers and Mr. R. A. Pointer, President of the Norwich and District Association. And, of course, My Lord Bishop.

**The Right Reverend the Lord Bishop of Norwich,** responding, said: No one can be a parson for nearly 50 years, and certainly not a Bishop for 34 years, without coming into a good many contacts with architects. Some of those contacts one would be glad to forget—they were times of stress and difficulty and argument. Others—and so very many—were opportunities of happy friendship and real communication of ideas that have enriched one's life. If it had not been that at about the age of ten years it was quite clear to me in what line my life must lie I would have been tempted to turn to architecture. I should have been a very bad architect. By this time I should have been the recipient of some sort of eleemosynary fund for depressed architects.

Why should I have been drawn to architecture? There are certain similarities between your profession and mine, between your dominating ideas and mine, and perhaps between some of your difficulties and mine. On the positive side you no less than I are all the time building for the future. We are occupied, you and I, day by day with tiresome details, worrying little problems and questions, unnecessary and trivial disputes. But woe betide us if we forget that in our hands lies a great responsibility. For in the days that lie ahead what we achieve is to stand and will make its contribution for good or ill.

As you have been about this city you have appreciated that hardly any other place in England can show such a complete picture of British architecture for the last 850 years; good, less good, maybe bad. You have appreciated what we in our generation owe to those who have gone before us. Most of the buildings you have seen remain as far as their architect is concerned anonymous. Some have great names attached to them. But are they

much more than names? They have passed into the forgotten pages of history. But their work remains. 'God buries His workmen but He carries on their work.' In architecture as in my profession it is true and worth remembering that as we inherited a great tradition that men known or unknown left to us from days gone by so we are for good or ill creating a heritage on which others will look back.

There is another thing—a similarity which perhaps grows out of the first. We are, you and I, living in the public limelight. We have no business to be resentful when people criticise what we do, our decisions, what we achieve. We may think the criticism is ill judged. But we have to remember that outside ourselves there is a great thing known as public opinion. There is a great public which we serve and it has the right to say when it disagrees with what we do, and we have to remember that it isn't only our own ideas that count. It is the impact that they make on public opinion and the spirit of our times.

I am led by that reflection almost into a criticism of modern architecture. I wouldn't like to do that. On the contrary I feel a great sympathy. Perhaps because of the fact that in some ways I share something of the same conditions, I feel great sympathy for the difficulties through which British architecture has been ploughing its way during these recent years. Perhaps rather more yesterday than today there has been a general assumption through our national life that because the times are new everything that is old and traditional is bad or has nothing to offer for present needs: that the one necessity is for new ideas to meet new needs. Out of that there seems to me to spring in architectural life through these last few years a devotion to such ideas as may be labelled in your minds as 'functional and original'. These can obviously represent elements in any architecture that is alive. A building must be fitted for the purpose it is to achieve and a mere copy of the things that are old cannot ever be architecture even if it is craftsmanship.

I rejoice to feel that we are coming through that rather difficult time, complicated for you by the production of new materials and methods of construction. We are coming to realise once more that the only true end of architecture is beauty. Our Cathedral is functional, our Assembly House is original, but which of you thinks of those buildings in those terms? Don't you feel with me that the dominant idea in our minds is that they are lovely?

So you are privileged in these days that are marked by a terrible materialism and a great deal of sheer ugliness to have the opportunity and responsibility of bringing back again into English life the love of things that are beautiful. If I and those in my profession can share in that task as I think we are trying to do, then we shall look forward to big things in the days to come. The days of English architecture are not dead. Perhaps the Golden Age still lies in front.

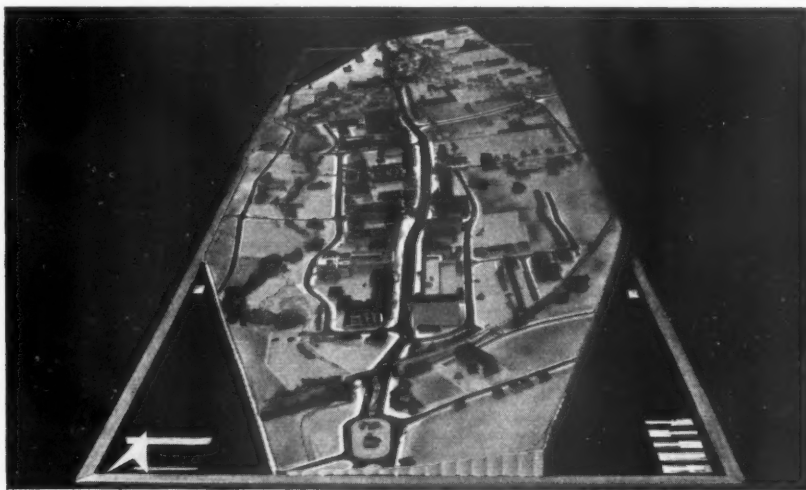
# Hemel Hempstead—New Town from Old

Exhibition at the R.I.B.A.

Opened by the President, Mr. C. H. Aslin, C.B.E., 22 May 1956



The principal road junction in the Town Centre. The panels of sculpture, commissioned by Hemel Hempstead Development Corporation, were designed and executed by Professor Gerrard



Model to the scale of 32 ft. to 1 in. showing the area being redeveloped in the Town Centre

Mr. Henry W. Wells, F.S.I., F.A.I., Chairman of the Hemel Hempstead Corporation: I have three things I want to say. First, I want to thank all the private architects who have assisted the Development Corporation. Secondly, I want to thank the R.I.B.A. and its President, and, thirdly, with a certain amount of timidity, I want to say something about the Development Corporation's philosophy of architecture.

With regard to the first, the Development Corporation has employed either directly or indirectly some 30 architects. Some 60 architects have however been involved in the expansion of Hemel Hempstead from its population of some 22,000 to some 40,000. In the process of expansion the private architects and the Development Corporation have been concerned in almost every form of building for which an architect can design. There have been houses, factories, shops, schools and so on. The total amount that has been spent on architectural work is something of the order of £15,000,000. Some £8,000,000 of that has been entirely in the hands of the Development Corporation and some £7,000,000 in the hands of private architects and the County Council—that is, Mr. Aslin. The task of co-ordinating all this, which falls to the Development Corporation, is not, you might think, an easy one; because it is the function of the Corporation to check the activities of all the architects who are employed. But the co-ordination has been quite superb, and that is one of the things for which I wish to record my respect for the private architects and my thanks for the way in which they have co-operated with us.

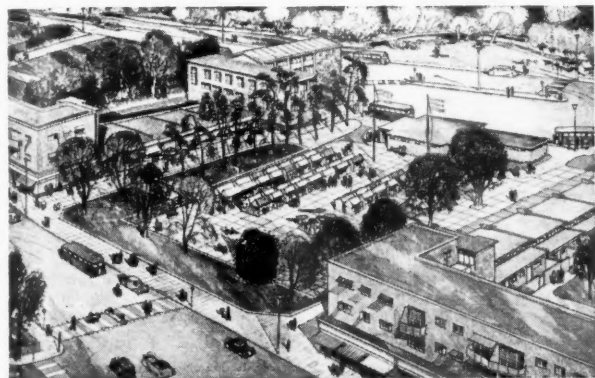
To come to my second point, I want to thank the R.I.B.A. for jointly sponsoring this exhibition with us and for allowing us to use this hall. And I also want to add to that my thanks to their President, Mr. Aslin, whom as you will understand we know quite well at Hemel Hempstead. We have a great admiration for his pioneering work in the schools of that county.

Finally, and quite briefly, I want to say something about the attitude of the Corporation towards architecture. The most common client nowadays is a public authority. And just as the former private clients, the big land-owners of history, had their philosophy—though they were perhaps incapable of expressing their views—so inevitably must a public authority such as a Development Corporation. The Corporation feel too that they have a considerable responsibility in this matter since they are spending £2,000,000 a year of public money on architectural work.

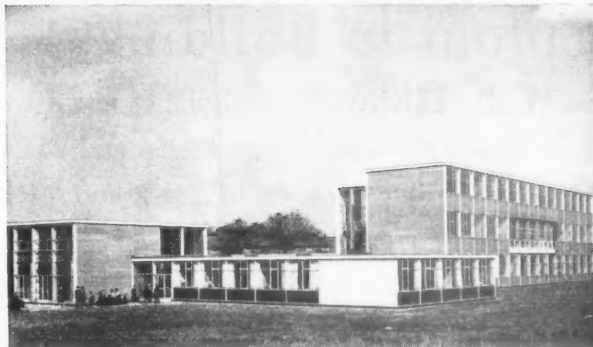
Now what is the Development Corporation's architectural philosophy? First, we believe that architecture reflects more truly than any of the other visual arts the cultural



An impression of the south end of the main shopping street



Impression of the Market Square, which is bounded by 20 lock-up shops and has no vehicular access



Bennett's End Secondary Modern School



A housing close, Flatfield Road, Bennett's End

development of our civilisation. Secondly, we appreciate that the origin of our particular culture and civilisation is the Greek culture and civilisation, and the geometry of architectural form and shape which we believe originated in the Greek civilisation we think should still be traceable from that classical genesis. It follows from that that the Development Corporation doesn't like deliberate attempts to break away completely—to revolt from the traditional form or idiom.

Fourthly, it does mean this: that we accept the climate, environment and social development in this particular island, which must of course continually influence the architecture. Thus, in the same way as the timber gables and the low-pitched roofs of the Swiss chalets look right among the Swiss forests and mountains, so in Hertfordshire brick and pitched roofs look at home—flat roofs would look out of place, we feel. Those are the effects of our particular civilisation on architectural form.

All I have said does not mean that the Development Corporation attempts to dictate to the architect. It doesn't. It chooses the architect who it believes has the same sort of fundamental thoughts as the Development Corporation. And in general I think you will agree if you go round this exhibition that there is in Hemel Hempstead a conscious thought running through

most—in fact pretty well all—its architecture.

I will now ask the President formally to open the exhibition.

**The President, Mr. C. H. Aslin, C.B.E.:** I am only half the right person to open this exhibition. The half that is proper to it is the half that is President of the Royal Institute. The half that is improper is the half that was fortunate enough to be able to build some of the buildings in Hemel.

The thing that is to my mind important is that we have here, as Mr. Wells pointed out, a tremendous example of the co-operative working between official architects, private architects, the contractors and all kinds of people who are instrumental in seeing that the public money is spent in the right way. I am sure the profession has a great debt of gratitude to the New Town Corporation for the sympathetic way in which they have dealt with the development of the new town.

The part of Mr. Wells' speech which gave me a twinge was his reference to flat roofs. We haven't built any houses in Hemel, but everything else has got flat roofs; perhaps as they are not houses they may be excused!

The R.I.B.A. is delighted to have this exhibition here and we hope that the spirit of co-operation which it shows will be read into it by all the various people who will

come and see it, because I think co-operation is the word of the future. We must have co-operation not only between architects and the various kinds of public bodies, not only between New Town Corporations, county councils and all the rest of it, but also with the contractors and engineers—in short, with all the specialists—right from the very start of a conception. Only by that kind of co-operation can we produce the architecture of this age. Over the last ten years I think it has been done to some extent, but not completely. I think we know our new techniques too little to be complacent about them, but we have had a few shots at using them and I think in the next few years we shall know more about them, shall produce architecture that is really speaking for this age and can be accepted as real architecture.

I have the greatest possible pleasure in asking you to accept the opening of this exhibition.

**Mr. H. Kellett Ablett, M.T.P.I. [F],** Chief Architect to Hemel Hempstead Development Corporation, proposing a vote of thanks to the President, expressed his thanks to everyone—architects, private and employed by the Corporation, contractors, county surveyors and others who had helped to build up the New Town, and also to all those who had helped in organising the exhibition.



# Colour in Buildings

By H. L. Gloag, A.A. Dipl. [A], and D. L. Medd, A.A. Dipl. [A]

Read at the R.I.B.A. 17 April 1956 and adapted for publication

Professor Basil Spence, O.B.E., A.R.A., A.R.S.A., Vice-President, in the Chair

## INTRODUCTION

IT IS TYPICAL of the complexity of life today that colour, even colour in buildings, can be discussed from a great many different angles. Science with its characteristic process of division and sub-division has introduced many headings under which colour has a place, such as psychology, physics, physiology and chemistry, and these are in addition to the analysis which architects and artists have always engaged in themselves.

Our purpose is not to associate ourselves with any one specialist heading or to invent new ones, but to suggest a line of thought which will give balance and direction to colour design and serve to synthesise the otherwise disjointed mass of data which accumulates from research, observation and experience. Research and practice are too often thought of as independent and it is hoped that the joint authorship of this paper by a research architect and a practising architect will demonstrate how research can be influenced by practice and how practice can be guided and inspired by research to their mutual advantage.

Inevitably we had to modify the pattern of our story to the material we were able to find in the form of 2 in.  $\times$  2 in. colour slides although, being limited to black and white, the question of colour reproduction does not arise in connection with this printed version. For this reason, and because of the need to avoid excessive length, we have omitted discussion of such important aspects as colour under artificial lighting, the significance of colour constancy, the value of glitter and sparkle, and give only passing reference to the exterior colouring of buildings.

Looking back over the last ten years, architectural colouring is seen to be emerging as a subject in its own right—despite black magic, fashion, housewife's choice, romance and pseudo-science with which it is bedevilled. We claim that colour has an effect on the character of buildings to a greater and more fundamental degree than is yet generally realised, and we wish to advance a plea at this point that architectural colouring should take a recognised place in the syllabus of all schools of architecture as an integral part of design, not as a mere embellishment.

The concept of character and the contribution which colour itself makes to character is our main theme. By 'character' we mean the collective effect of visual qualities, and we refer to it when we use such terms as 'stimulating' or 'depressing' to describe an interior. These terms and others like them express a reaction which, in the visual context, may refer particularly

to the lighting, or to the colouring, or to the form, although all three must always be present, acting mutually and not exclusively. Vague as these terms are by themselves, we believe they are highly significant because they suggest positive aims in design of a more fundamental and enduring nature than period style—which more often than not refers to form only and is, in any case, a transient quality. In support of this contention we begin our illustrations with opposed extremes of character, first 'dramatic' and then 'suffused', without regard to date or style of the subject.

From the broad conception of character we are led to consider what qualities distinguish one character from another and which is appropriate or inappropriate character for a particular case—should it, for example, be 'highly stimulating' or 'restrained'? Such a question can only be answered by a study of what people want to do in buildings, and the means by which buildings can be designed to give to their users the greatest pleasure, comfort and efficiency. In this connection we would like to suggest that the arguments recently conducted in public concerning the future of Colclutt's Imperial Institute would have been a little more balanced perhaps had more attention been paid to the adequacy of the interior for its purposes instead of being concentrated, as so often happens in architectural criticism, on the exterior. In any development associated with architecture that is likely to have a lasting value every effort should surely be made to see that the contribution of the architect is a creative step in meeting human requirements in their broadest sense.

The pursuit of an appropriate character therefore brings us to particulars about human requirements and the means of satisfying them in buildings. It is here that science and systematic studies come to our aid.

Although the colouring of buildings is as old as building itself, and examples from past centuries will always be an inspiration to us, it is not until recent times that there has been a systematic study of the subject. It is only recently too that the importance of the relation of light sources to decoration and the function of the space seem to have been consciously appreciated so that their intrinsic as well as their symbolic qualities can be seen. A comparison of mediaeval frescoes and the achievements of the teams of Baroque designers in Germany is interesting in this respect, but then their beliefs were utterly different. Interest in colour and lighting has been stimulated by the rapid scientific developments in these

subjects, by the invention of photography and by the intensive interest of artists (notably the Impressionists) in effects of light, shade and colour. Ozenfant's articles in 1937 in the *ARCHITECTURAL REVIEW* were an interesting example of an artist setting down his ideas on colour in buildings, and very stimulating they were too. They, we feel, influenced the colouring of some of the early post-war schools, and these in turn have had their influence. Although we have probably progressed some long way since Ozenfant's statements we think they began to make some architects aware for the first time of the idea of relating colour to lighting in buildings, and of the potentialities of strong colours, not to mention his plea for a common language in colour which would make ideas more easily communicable.

Early work on schools quickly showed the need for a wider range of colours than manufacturers were then offering; not more colours but a more representative selection from the whole colour field. Similarly, studies then beginning at the Building Research Station showed the same need for factory colouring, leading to a survey of colour reference systems from which it became clear that the Munsell system was the most useful and convenient basis for the systematic study of architectural colour problems in general and for the design of a paint range. One joint outcome was the Archrome Range, familiar perhaps by its publication in *Building Bulletin No. 9*.

The establishment of colour as a subject of research at the Building Research Station was itself evidence of the growing interest in it here and abroad, but there were the special advantages that research could be jointly architectural and scientific and that the work on lighting at the Station had important implications of colouring.

Before closing this introduction, there is a further development connected with the work referred to, which is the publication of British Standard 2660: 1955 (*Colours for Building and Decorative Paints*). In this connection it is interesting to read today what Ozenfant wrote in 1937: 'I believe that an immense service would be done to architects, house decorators and house painters, etc., if a chart specially adapted to their particular requirements were established. This chart might contain about 100 hues.' (B.S. 2660 contains 101 'hues' or, more properly, colours.)

Ozenfant went on to stress the importance of annotating each colour in precise terms, but unfortunately was only aware of the Ostwald system. How much time and confusion would have been saved if publicity of the Munsell Atlas had preceded

that of Ostwald! Ozenfant, either through a misprint or with tongue in cheek, recommended that the colour panels should be 6 ft. by 3 ft. but ours are no more than 1 in. by 1 in. He continued: 'Great Britain has a sufficiently powerful chemical industry to take the initiative with such a chart which would render service to all architects of all countries (and to the paint industry). The initiative could, of course, be taken by the Standards Office, otherwise a leading firm of colour makers (or the British Colour Council) could issue a chart.'

Events have shown that although the colour panels are a miniature of what Ozenfant envisaged, in other respects he was right—Great Britain and its industry have the initiative and the Standards Office (as Ozenfant called it) is the publisher.

Because architects previously had very little hand in designing paint colour ranges for buildings, it is small wonder that their

needs could only be met by ordering 'special' colours which serve to reduce efficiency of manufacture and raise costs. The new range is not a panacea and inevitably is a compromise between many conflicting interests, but it can be regarded as a first step in a tradition of colour range design that departs from haphazard to systematic selection and arrangement. One final word about arrangement. It is generally recognised today that any colour can be defined in terms of its three essential attributes of hue, lightness and strength, corresponding to the Munsell terms Hue, Value and Chroma. The shade cards of the new British Standard range display each colour in a manner which clearly reveals these three properties, and appends approximate Munsell references against each as a detailed indication of the relative properties of the colours; an indication which cannot conveniently be given in any other

way—certainly not by names which would soon become unmanageable.

Now that the new B.S. range is available in the form of a design instrument it remains for the profession to give it their support in practice and for the industry to be thus encouraged to make the actual paints available in all the 101 colours.

To be in a position to specify colours with confidence however it is essential to give thought to a more precise understanding of the part which colour plays in building design. It is in an attempt to contribute to such understanding that we have arrived at the concept of character.

*(The lecture which followed consisted of 56 colour slides and a combined commentary. For reproduction purposes a specially modified version of the commentary is given here, divided into seven main parts and related to a selection of the slides in black and white.)*



Fig. 1. 'The Adoration of the Shepherds', by Rembrandt



Fig. 2. Monastery Church of Banz near Bamberg, Germany

**Section 1.** As we said in the introduction, 'visual character' is our main theme, and the first illustrations show how contrasts of illumination can be the major or dominant feature, in the extreme producing a 'dramatic' character.

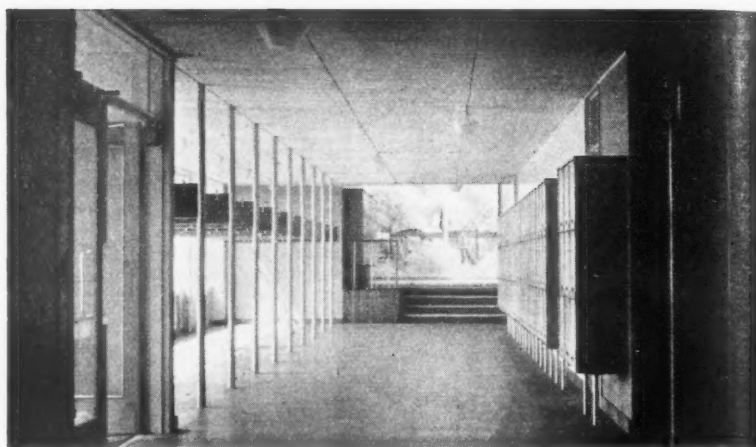
Fig. 1 is chosen to symbolise a dramatic character. Our concern is not with the subject-matter of the painting but with the means used by Rembrandt to express it,

in particular: (a) the eye goes to and is held by the bright area; (b) despite the strong concentration of brightness there is sufficient light in the surroundings as a whole to eliminate harshness; (c) the main source of light is concealed from view allowing dominance to the figures themselves; (d) the picture is defined primarily by contrasts of light and dark. Colour is only truly apparent in the bright area.

Fig. 2. This baroque church interior is dramatic to the point of being theatrical, and we see the same visual characteristics as in the Rembrandt painting. The lighting from a concealed window is concentrated chiefly on the altar and our eyes are drawn to the wealth of colour and detail revealed there. We are nevertheless conscious of the interior as a whole, the gentle suffusion of reflected light being picked up by the white colouring.

*Fig. 3.* In this contemporary example there is a deliberate alternation of soft and bright lighting which adds interest and punctuation, but the contrast of light and dark is coupled with contrasts of soft and bright colour. A blue panel at the far end of the main window and red panel at foreground-right tell strongly, although chief interest is held by the secretly lit mural painting. Note that the soft, pale background colour 'rounds-out' the bright spaces and softens the shadows.

**Section 2.** From dramatic we turn to opposite examples of what we will call a 'suffused' character. Shades and shadows play a much smaller part and details of colour and form become significant in the whole interior.



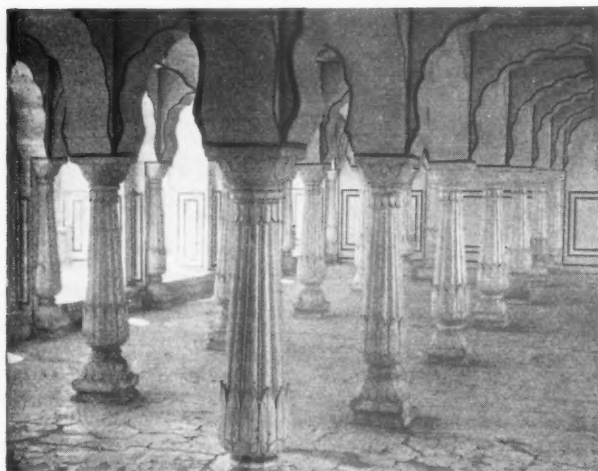
*Fig. 3.* Wokingham School, Berkshire (Architects and Building Branch, Ministry of Education)



*Fig. 4.* Interior at Petworth by J. W. M. Turner

*Fig. 4.* This painting symbolises a suffused character. It is idealised in the sense that shades and shadows have been omitted altogether. The subtleties of the light colouring can be appreciated in all parts of the picture, our eyes being drawn this time to the contrasts of dark colour.

*Fig. 5* illustrates full suffusion in actuality. The shading is very delicate and every detail of colour, form and pattern is clearly visible. Indirect light is spread throughout the arcade, and it is important to note that the upper parts are hardly less bright than the lower.



*Fig. 5.* Arcade at Jaipur Palace, India



*Fig. 6.* Staircase hall, Wurzburg residence (Balthasar Neumann)

*Fig. 6.* The windows in this large baroque staircase hall are mainly on one side, but the light colouring up to cornice level suffuses the daylight. It is on record that Neumann's intention was to overcome the tendency to heavy shadowing, and his success is demonstrated by the ease with which we can see the details of Bossi's elegant stucco work and the clarity of Tiepolo's famous ceiling fresco.

**Section 3.** In the examples above we have demonstrated distinct differences of character. In practice we can seldom regard ourselves as free to choose a pattern of light, shade and colour without regard to function and the problem becomes one of arriving at a character which is appropriate for each particular case. We proceed therefore from the general to the particular and



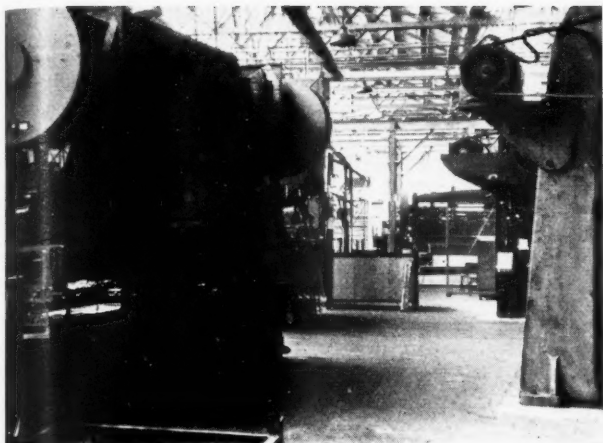


Fig. 7. Heavy sheet-metal press shop

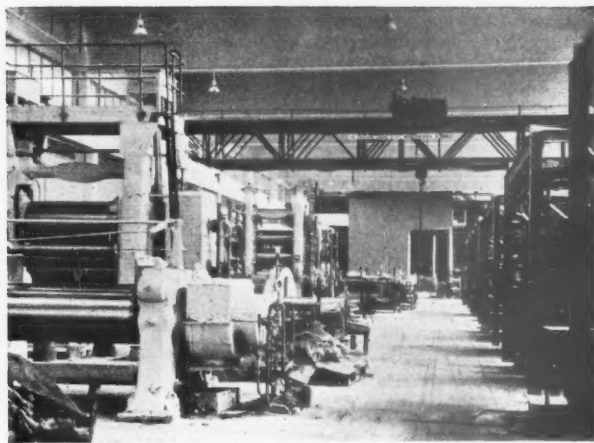


Fig. 8. Brynmawr factory (Architects' Co-Partnership)



Fig. 9. Queen's College Library, Oxford

*Fig. 9.* As in Fig. 7, one-sided lighting is producing extensive shadowing and strong modelling on objects in the room. As a library however, in which print has to be read, more even lighting would be appropriate; only obtainable here by increasing the lightness of all the main surfaces including floor and furniture.

*Fig. 10.* In contrast with Fig. 9, the whole architectural treatment here is related to the purpose of reading print clearly and easily. The light entering from above is well screened and well distributed by reflection from the floor, picked up and further distributed by the white of the upper surfaces. A point of secondary concern at this stage of our discussion is that the slight truncation of the top-light reveals reduces their brightness to an acceptable degree.

consider the quantity and distribution of the total light in interiors in relation both to colour and to the purposes for which the room is designed.

*Fig. 7.* It is far too common to find factory interiors like this in which light comes from one main direction, usually the north slope of the roof, and is not adequately distributed by reflection, or other windows, from other directions. The view here is of the working side of the machine and the light and shade effect, which might in other circumstances be accepted as dramatic, is gloomy and objectionable as judged in relation to the work.

*Fig. 8.* Similar strong shadowing is avoided here by the use of light colours on structure and machines. The daylight enters mainly from a continuous clerestory window to the right and it is the high reflectivity of the colours which suffuses the light and softens the shadows.

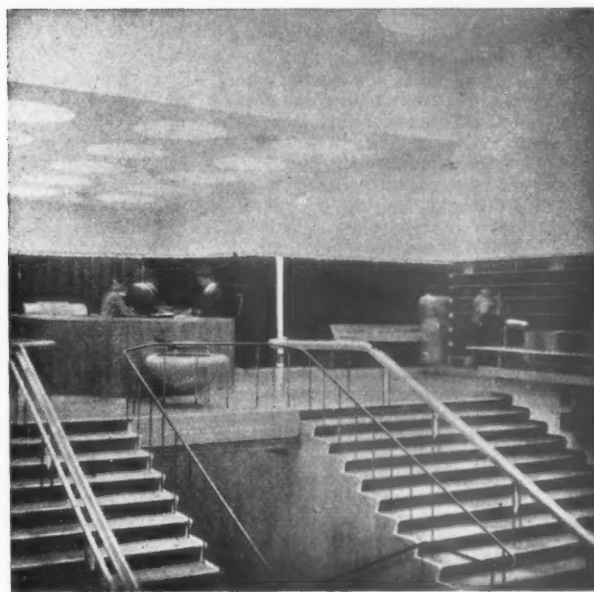
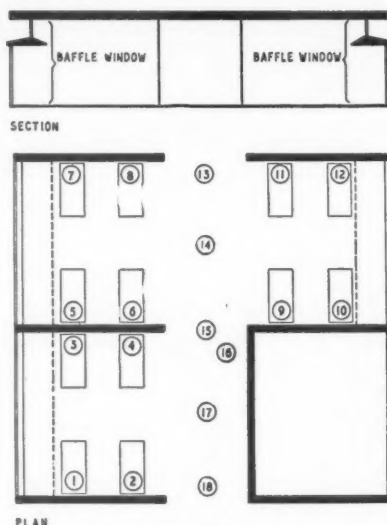


Fig. 10. Library at Viipuri, Finland (Alvar Aalto)

**Section 4.** The total illumination in a space is made up of direct and reflected light. The greater the proportion of reflected to direct light the more suffused is the character likely to be and the more dependence is there on colours of high lightness. Functionally a suffused interior allows greater freedom of vision in the interior as a whole, as opposed to the more dramatic potentialities of localised or concentrated lighting.

**Fig. 11.** The ward unit in the experimental wing designed by the Nuffield Foundation Division for Architectural Studies, shown here in diagrammatic plan and section, was the subject of studies in lighting and colour at the Building Research Station. It is referred to here because of the special problem of obtaining enough light along the centre. An adjustable model was constructed at B.R.S. and detailed measurements made of the effect of various reflection factors on walls, floor and ceiling and of different ceiling heights. From these, an optimum ceiling height and limits on the reflection factors were determined. The



**Fig. 11.** Ward unit, Larkfield Hospital (Nuffield Foundation Division for Architectural Studies)



**Fig. 12.** Nurse's station, Larkfield Hospital

'baffle', dividing the main windows horizontally, was treated as an essential part of the design to aid visual comfort. One of the important findings of the study was that an estimate of the reflected light depends on the average of the reflection factors of all the main surfaces.<sup>1</sup>

**Fig. 12.** This view of the nurse's station, which forms a link between one ward unit and another symmetrical unit, indicates the dependence on reflected light at positions farthest from the windows. Notice that shadows are horizontal and that the general effect is of soft suffusion. The walls inside the station are coloured white, not because they can greatly influence the total light so far from the windows but because they give a valuable sense of brightness.

This example of the new wards at Larkfield Hospital was the first instance of specific levels of reflected light being taken into account in the refinement of a design.

<sup>1</sup> For full report see *Studies in the Functions and Design of Hospitals*. Oxford University Press, 63s.

The knowledge so gained has led to the development of new techniques and instruments which are already in use and which no doubt will be further developed in time to cope with the prediction of reflected light in many different types of building interiors.

Tables of suitable levels of light for various kinds of work are given in the Illuminating Engineering Society's 'Code for the Lighting of Buildings'. The B.R.S. Daylight Protractors are already well known as a means of predicting the direct light and these are now being supplemented by 'nomogram' charts, or by a specially designed slide-rule, for obtaining an estimate of the total light, part direct and part reflected from walls, floor and ceiling.<sup>2</sup>

These instruments of course are a means of refining or of checking designs at drawing-board stage, and are not a substitute

<sup>2</sup> See *ARCHITECTS' JOURNAL* for 5 August 1954, Technical Section 24. 'Lighting, reflected light', R. G. Hopkinson, B.Sc., Ph.D.

for the designer's sensibility in determining the main lines of a design. So far as colour is concerned, they give an indication of the reflection factors required for the main surfaces. Questions of hue and strength have still to be decided.

**Section 5.** Quantity of light is not of course the only consideration. If it were, white colour, bare lamps and large windows would be the rule. We have to aim at comfortable contrasts as well, and the most significant contrasts are those between light and dark. We would always want to avoid glare and harshness but colour also serves to develop contrasts for more positive purposes of definition and clarity.

Sometimes the requirements of quantity and of comfort are the same, but more usually they conflict to some extent and a satisfactory compromise can only be achieved by modifying the quantity of light to achieve greater comfort. Such modifications involve form as well as colour; a sensitive design of the windows and



**Fig. 13.** Folkestone Technical School (Architects' Dept., Kent County Council)

adjacent surfaces can contribute decisively to comfort at the same time as it obviates resource to screening devices and frees colour from remedial for more positive roles. The next three illustrations refer to all three—light, colour and form—to emphasise their interdependence. We have also to remember such devices as blinds, curtains, special glasses, etc., which are useful for reducing the brightness of the windows themselves.

**Fig. 13.** This design demonstrates a well-thought-out integration of lighting, colour, structural and planning requirements. The deep louvring above has not been added in afterwards at great expense. It comes about from the casing of the structural beams, the surfaces so formed acting as both screens and reflectors—of artificial as well as daylight. The light soft colour on the casing was chosen to avoid excessive brightness or reflection of coloured light on to the working plane below.

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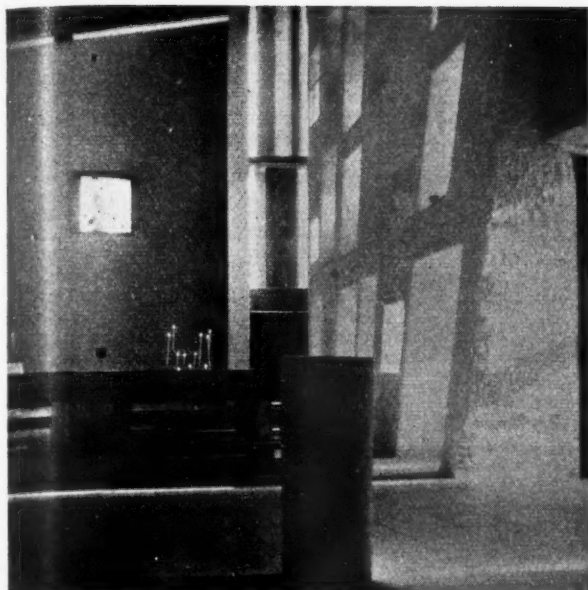


Fig. 14. Notre Dame du Haut, Ronchamp (Le Corbusier)



Fig. 15. Office interior

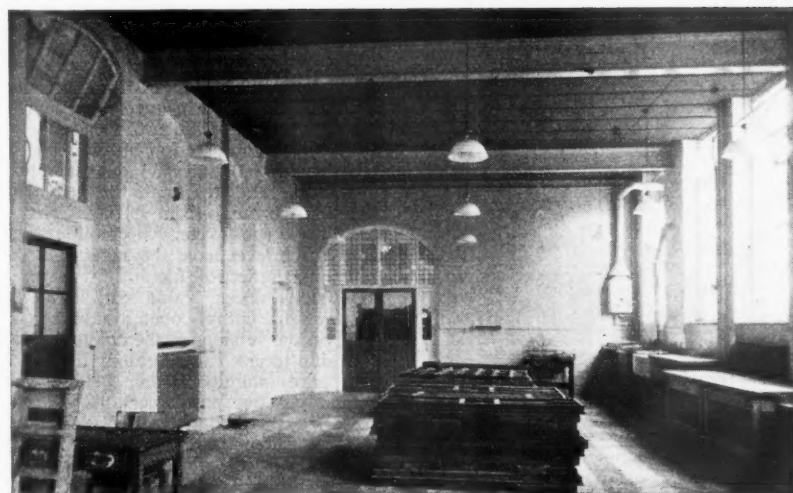


Fig. 16. Daniel Defoe School, L.C.C.

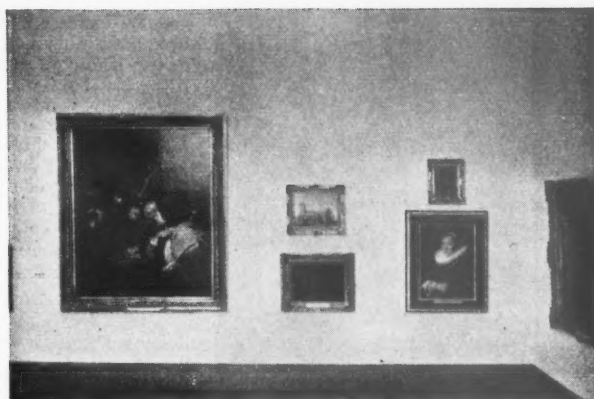


Fig. 17. Art gallery, Gothenberg

*Fig. 14.* The whole effect in this church by Le Corbusier is of gentle suffusion of shafts of light infiltrating through deep recesses or past concrete louvres behind glass, caught up and spread by the light colouring. The brightness of the interior is only allowed to compete with the higher brightness outside at selected points or from selected angles.

*Fig. 15* is included to sum up the problem of achieving comfortable single-side lighting. Several of our pictures show interiors lit mainly or solely from one direction, in which the important aim is to avoid unpleasant silhouetting. Colours of higher reflectivity inside this particular room would help to soften the contrasts but could not altogether correct the intrinsic disadvantage.

*Fig. 16* shows skilful redecoration of a room built about fifty years ago. The white and light grey of the walls is spreading the light but note that the white on the piers between windows acts chiefly as a softener of contrasts. The wall on the left is painted white, thus increasing brightness in the least lit part of the room, and its apparent brightness is by a slight darkening of the cross-wall painted in light grey (No. 9-094). Dark colour on the doors and radiators enhances the brightness of the walls and creates contrasts which balance the natural ones on the window side.

This is a dining room, and a note of higher stimulation, considered appropriate, has been added in the form of bright red on the ceiling. The success of this red depends on the fact that it is softened by shading and, for the same reason, does not 'flood' onto the other surfaces of the room.

*Fig. 17.* The white walls in the locality of these pictures must increase the total light in the room as a whole but set up too strong a contrast. The conflict could only be resolved by darkening the walls to a level nearer to that of the pictures.





Fig. 18. For his own purposes, Le Corbusier has carried the black band on the ceiling on to the window surround and has thus greatly increased its contrast with the brightness outside. Before emulating him in this detail we should remember that he is a very bold man and does not often blacken his window surrounds!

Figs. 19 and 20 show how colour can transform a typical Edwardian classroom. Note the elimination of shade in the upper part and the increase in general visibility. A slightly darker colour on the frame of the glazed screen in Fig. 20 would have reduced the insistence of its pattern.

Fig. 18. Hostel at Ronchamp (Le Corbusier)



Fig. 19. Haverstock Hill School, L.C.C. typical classroom

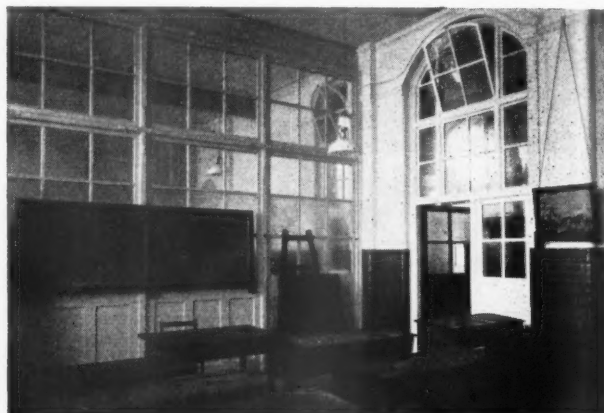


Fig. 20. Similar classroom after decoration

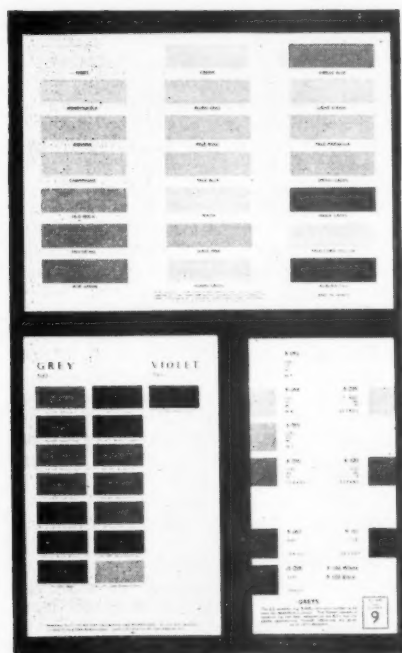


Fig. 21. Paint shade cards compared

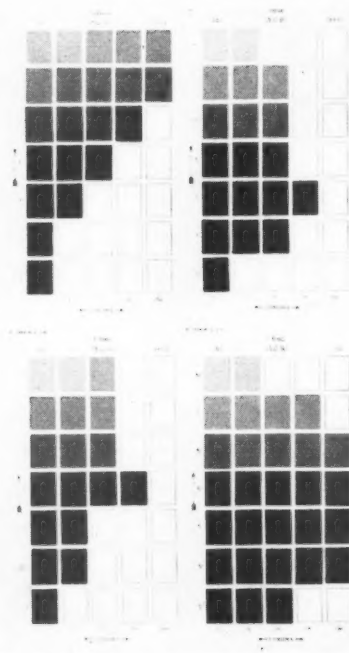


Fig. 22. Four pages from the Munsell Atlas

**Section 6.** In the handling of colours to obtain suitable contrasts or suitable levels of light, we have laid stress on the lightness or reflection factor of colours as distinct from their hue or strength. A simple reference to lightness is of practical advantage in the design of colouring, and the next two illustrations demonstrate how it is achieved.

Fig. 21 illustrates a typical manufacturer's shade card (top), the 'Grey' section of B.S. 381-C: 1948 (bottom left), and the Grey card of the new B.S. 2660: 1955. In black and white reproduction only comparative lightnesses are evident and it can readily be seen that a deliberate order from lightest to darkest is a feature of the new B.S. card and is lacking in the other two. A similar gradation applies throughout the

cards of the new B.S., thus providing a horizontal link of colours with similar lightness but differing Hue (green, red, yellow, etc.) or Strength (weak, fairly strong or strong).

Fig. 22. The Munsell Atlas is the most convenient available reference to orderly steps of lightness and was adopted as the 'parent' to the orderly arrangement of the new B.S. range. Four from the total of 40 pages in the Atlas, each representing variations of one hue, are shown here—Yellow at top left, Blue at top right, Green at bottom left and Red at bottom right.

The scale of lightness (Value) from top to bottom, and the scale of increasing strength (Chroma) from left to right, is common to each page. All colours at the same Value level have the same lightness and similar reflection factor.

Decisions about Value still leave the choice of Hue entirely open, but set certain limits on the versions of the colours. Thus, a decision to use Value 8 (along the top of each page) admits strong yellows but excludes all but pastel versions of blue, green or red. Similarly, a decision to use Value 4 (three steps up on each page) admits strong blues, greens or reds, but excludes all but olive-green versions of yellow.



Fig. 23. Cream-painted school corridor

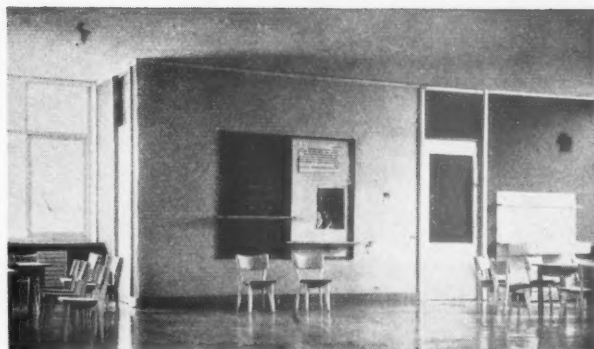


Fig. 24. Model of classroom, proposed school at Amersham, Bucks. (Architects and Building Branch, Ministry of Education)

**Section 7.** We have discussed the visual character of interiors in terms of a pattern of light and dark, and have attempted to show that the functions of colour in modifying the pattern for purposes of comfort and quantity depend chiefly on its lightness as distinct from its strength or hue.

We have also said that decisions about lightness (Value) leave the choice of strength (Chroma) partly open and the choice of Hue entirely so. In this last section, we are concerned with the contribution that colour itself makes to character, the intention being to emphasise primarily the importance of the choice of strength, secondarily the choice of hue, and the relationship of both of these to form and function. For the sake of brevity we limit ourselves to examples of restrained and strong colouring.

That the opposite effects of stimulation and enervation can be achieved by colours of maximum and minimum strengths, irrespective of hue, illustrates the predominant importance of strength.

(Figures given in brackets in the commentary are serial numbers of colours in B.S. 2660: 1955.)

*Fig. 23.* This and the next six pictures concern effects of restraint and subtlety in colouring, although there is more of restraint than subtlety in this example of school corridor. The walls are cream except for pale blue on the piers between windows.

The popularity of cream is an interesting phenomenon, apparently due to the fact that it is relatively unstimulating, even when fairly strong, and we are able to take it for granted without difficulty. Probably a cream and brown scheme represents the minimum on the scale of colour stimulation, and although cream has the merit of being light, useful in spreading the available light, it fails to create the visual interest and liveliness that is appropriate in such spaces.

Cream is a weak and light version of

yellow-red or orange, and happy companions to it from other hues are not easy to find. A final point about this corridor is the difficulty presented by the long stretch of wall on the right. Seen at a slanting angle, the reflection of light on the surface would obscure any attempt to divide the wall by changes of colour alone; this could only be done effectively by projections or breaks of a more robust kind than the thin vertical ribs used here.

*Fig. 24.* This shows part of a model of a proposed classroom, constructed at the Building Research Station for colour studies, with Brown (No. 2-032) on the panel containing the sink, Light Brown (No. 3-034) on the panel containing display-boards, White ceiling, and Light Brown/Grey marbled P.V.C. flooring (average 2.5Y 7/2). The trim is glossy white or natural wood.

The character produced by the close harmony of browns on floor, walls and furniture is of quiet restraint, but this combination of colours, so frequently encountered in all kinds of buildings and so often leading to dinginess, is saved from being so here by the careful choice of Hue, Value and Chroma, and by the sparkle of the

white trim and white tiles. Nevertheless, the character is too sophisticated for a classroom for young children. A more suitable scheme would be fairly strong red (No. 1-023) in place of the brown, and pale pink (No. 1-015) in place of light brown. The chief change would then be of Hue, the Values remaining the same and Chroma only changing three steps in the case of the red.

*Fig. 25.* Discussion of restrained and subtle colour cannot omit natural materials. This example of the same wood being used throughout emphasises its special qualities (monotony would certainly result if a single matching paint colour were substituted). The countless minute variations of colour, texture and pattern in wood merge pleasantly at a distance and continue to produce interest at close quarters. It is difficult to reproduce this quality artificially, except to some extent in wallpapers and fabrics. The sweeping away of mouldings and other traditional means of obtaining a visual interplay still offers a challenge to architects to find some equivalent means of extending the decorative 'palette' into the region of richness. And, as natural wood demonstrates, richness does not come solely from strong colours.



Fig. 25. Library at Nyborg, Denmark



Fig. 26. Schloss Pommersfelden, staircase hall (Hildenbrandt)



Fig. 27. Ceiling detail, Schloss Pommersfelden

Fig. 26. In this baroque staircase hall by Hildenbrandt, completed in 1718, the colouring on the architectural form is truly delicate. Appreciation of this delicacy is permitted by the full suffusion of light and absence of heavy shadowing, itself a result of the light key of the colouring.

The progression from white on the window reveals to the richness of the frescoes is made possible by the breaks and punctuations of the classical and baroque detail, which also add delicate shading and highlights. The robust dark colour on the balustrading emphasises the delicacy elsewhere.

Fig. 27. On the ceiling of the gallery shown here, the colours are 'poised' between the clean white around the windows and the full colours of the main, central frescoes. Four colours appear on this ceiling detail—white on mouldings, pale blue on the ceiling itself, pale yellow-grey on beams and columns, and raw umber in the painted

medallion. (The yellow-grey approximates to No. 4-047, and the blue to No. 7-082.) The 'neutralising' of the colour in the medallion is typical of the tendency in German baroque or rococo to avoid sharp interest near the windows or competition with the main frescoes inside. The whole scheme displays a remarkable sensitivity to visual qualities.

Fig. 28. This again is a reference to the special qualities of natural materials, in this case Cotswold stone. Its mellow variations harmonise closely with the browns and greens of earth and plants, while the white on door, framing and railings gives crispness to the architectural detail and still does so when there is no sun to give sparkle. Some of this crispness could be exchanged for colour contrast if the door only were painted a blue, both qualities would be lost if all paintwork were a uniform cream.



Fig. 29. Cottages at Kirkcudbright, Scotland



Fig. 28. Tocknells Court, Painswick, Glos.

Fig. 29. The unassuming but satisfying treatment of this simple cottage, in black, white and middle grey, comes not from hue, which is absent, but from the liveliness of widely spaced neutrals. A local tradition of colouring is at work in this small Scottish town and the colours fit the form unselfconsciously. There are many inspiring examples of live local traditions of colouring in Europe, most of them depending on a small selection of hues extended to give variations of strength and lightness within each hue. Using the variations of one hue on a house ensures harmony and unity, while a change of hue from house to house adds interest to groups of buildings. Such sequences of lightness and to a lesser extent of strength have deliberately been included in the new B.S. range, although the opportunity for further developments should not be missed when the range is reviewed. Examples are the series of 5Y colours on the Yellow card, and the 10YR's on Card 3. Apart from their usefulness for exterior work, these series, particularly in the 'soft' category (Chroma 2), are valuable for grading colour in interiors in sympathy with lighting and form.





Fig. 30. Houses at St. Albans

Fig. 30. Ill-considered form makes colouring difficult, and in this case the absence of a discipline born of tradition has opened the way to a garish combination of all black, all strong red, and all strong green on adjoining houses.

Fig. 31. Strong colour has a valuable part to play as an agent of stimulation both inside or on the outside of buildings, and it has been used successfully on many frame and panel buildings such as the one seen here. With so strong and straightforward a pattern of form as this, it is difficult to go wrong. The rule of putting white or light greys on the frame and the colour on the panels can only be broken successfully with great skill, distinctive colour on the frame carrying with it similar risks to those of a strong colour on a picture-frame.

Fig. 32. Strong colour plays a considered part in this classroom. Strong red has been used on the cupboard doors and in this position interferes with no other visual function and contributes stimulation to an otherwise carefully restrained colour scheme.

Fig. 33. The previous three illustrations have been concerned with the use of strong colour, and this view towards the ceiling is chosen as the tailpiece because it exemplifies a character of powerful stimulation. The colours here which are strong or fairly strong in themselves tell more strongly still in juxtaposition; but the main point of our observations here, as in our discussion as a whole, is that the visual character is not conveyed exclusively by the colour, or by the lighting, or by the dynamic forms. All three are contributing together and in alliance with each other. Thus this lecture inevitably has been concerned almost as much with lighting and form as with colour itself.

#### Acknowledgement

Fig. 1 is reproduced by courtesy of the Trustees, the National Gallery, London. We are indebted to Mr. J. B. Bickerdike for Fig. 17 (Gothenberg Art Gallery), and to Mr. J. A. Donat for Figs. 14 and 18 (Notre Dame du Haut, Ronchamp).



Fig. 31. Aboyne Lodge School, St. Albans (Architects' Dept., Herts C.C.)



Fig. 32. Aboyne Lodge School, classroom interior



Fig. 33. Marmorsaal at Schloss Pommersfelden

## DISCUSSION

**Mr. A. Douglas Jones [F]:** I should like to begin by thanking our speakers, on behalf of all of you, for a very stimulating lecture. My only qualification for proposing this vote of thanks is that I have known both Mr. Medd and Mr. Gloag for a very long time; in fact, I knew David Medd first in 1936, which is twenty years ago, when he was a student of mine. One of the attractions of teaching is that one sometimes meets stimulating people, and David Medd was certainly always stimulating. His drawing-board was invariably worth visiting. In those days he used to design furniture, which he made, and I think that probably he as much as anybody else was responsible for school furniture as we know it. In those days, in 1936, they were working away at Ostwald and putting a great deal of thought into their colour and laying the foundations of what you have seen this evening. Then they carried these ideas to Hertford and, I suppose, realised the link-up between light and colour. That, I think, is where Mr. Gloag comes in. I have known him only since the war but I have worked with him and I do know that he has a wonderful sense of colour and is a most stimulating person to work with. I think that these two have guided thought in the world of colour since the war as much as anybody else, and probably they have also done as much as anybody else to codify colour.

I can speak only for myself, but I do want to tell you that I think the schools take this business of colour and light extremely seriously, and that first-year students are instructed in it.

I do not want to get involved in colour theory, but I want to tell our two lecturers that we have enjoyed their talk enormously, I think mainly because they obviously know their job. Their comments were very much appreciated, as were also their delightful slides. I think we ought to congratulate the Science Committee for putting on a very good lecture.

I propose a very hearty vote of thanks to our two speakers.

**Mr. S. A. Wood (I.C.I. Colour Advisory Department):** I think I must have been invited to second this vote of thanks because I represented the other party in the introduction of this colour range; in other words, in the introduction of this 101 colour range I was to the paint industry what Mr. Medd and Mr. Gloag were to the Royal Institute of British Architects. I think I should confess at once, in fairness to the speakers and to the R.I.B.A. ad hoc Committee, that it was due to the efforts of the Paint Industry Colour Range Committee that this range does suffer a little as the design instrument which the R.I.B.A. tried to make it. I am making no apology for that, because the paint industry and the architects had two different ends in view. The architects were looking, I think, very largely to the future, whereas the paint industry was doing its job of meeting an established demand for colour. I think that there are in this audience and up and

down the country many architects who have not quite the use for what we describe, for want of a better term, as the aesthetics in this range and wish to use the more subtle colours of which we have seen such delightful examples this evening. I think it would also be only fair to say that this range was made possible only because of the initiative of the paint industry, who set the ball rolling.

There is one thing that I regret in relation to this colour range. Some of my colleagues from the paint industry on the British Standards Committee would have liked not to include colour names on the card (I think they agreed that names were undesirable on the range itself) but to include colour names in an appendix. The reason for that was that inevitably all paint manufacturers will give names, and very fancy names, to these colours, and each paint manufacturer will give a different set of names. This is something of a paradox, because the B.S.I. Committee which sponsored this particular range was initially formed not to standardise colours but to standardise colour names. You may say: 'Why colour names?' There are two good reasons for having them, from the point of view of the paint manufacturer. One is that it cuts down the margin of error. If you make a mistake in a letter, in a word which describes a colour, it is quite clear what colour is being ordered, but if you make a mistake in a figure, when quoting a number, the wrong colour arrives. You may be interested to know that in all the Munsell references referred to me, two out of every three are incorrect. The very simplification of the system can very easily lead to errors. Therefore I do think it is a pity that we did not have the appendix which was proposed.

I regard it as a privilege and a very great pleasure to second this vote of thanks.

**Mr. S. A. W. Johnson-Marshall, C.B.E. [A]:** I want to touch on only one aspect of this work. Dr. Gropius was here about a week ago, and I cannot help feeling that he might have been rather pleased to listen to at least one aspect of this talk this evening, that is the complete accord between members of our profession, working on behalf of the Institute and their clients, on the one side, and industry on the other. I feel that it was a momentous achievement for the R.I.B.A. to take the initiative in this matter, with the gallant support of the organisations that have been mentioned, and I do hope that this will be followed in every other sphere of our work.

**Mr. W. A. Allen [A]:** I want to ask the speakers to say anything that they might feel they would like to say about the curious working of the forces underlying traditional design. One has seen of course a good many examples from the Rococo and Baroque work shown here this evening and some of the contemporary work, and one sees the attempt to explain some of the forces which obviously did underlie

tradition, but this point was not very specifically developed by Mr. Gloag and Mr. Medd. It became incidental to the slides. I wonder whether they could say anything on this point, which so often interests us at the Building Research Station, of the underlying influences which are the basis of the functionalism which has operated throughout all architecture.

One used to think of functionalism twenty years ago as the great creed of the 1930's. It was a very barren one as we saw it in those days, I think. After the war the word fell into disuse and became almost unpopular. At the Building Research Station it began to mean something quite new; a great humanist functionalism such as Mr. Gloag and Mr. Medd have developed this evening. It is Mr. Gloag's particular business of course to interest himself in this aspect.

**Mr. S. Johnson:** I was interested in what the lecturers said about the colouring of the exteriors of buildings, and I should like to ask them whether they consider that the effects shown in some of the streets were in any sense accidental. Would not it be better to consider colouring, so to speak, by the street rather than in a series of individual buildings, so that the result in the street as a whole would be satisfactory?

**Mr. E. J. Rae (Messrs. Farmer & Dark [FF]):** I feel that in this lecture there has been a lack of reference to the modern treatment of buildings, especially the larger ones that are now being built. No mention has been made of the effects of weather on anodising and the interesting fact that the anodising of aluminium has a lightening effect. It is mostly interiors that have been dealt with this evening, and I should have liked to see more slides and more discussion on the treatment of large buildings with the latest finishes, such as vitreous enamels and plastics.

**Mr. J. Keenan (Colour Consultant):** This evening no mention has been made, possibly owing to lack of time, of the very important psychological effect of colour on the actual human being who has to use the building, especially in the case of mental hospitals, schools and so on. I am wondering how eventually we are going to overcome the problem of the architect and the hospital management committees establishing a firm confident relationship with the medical profession in this matter. How are we going to achieve what is good or right for the human being in the colouring of a building?

**Mr. Donald Insall [A]:** I should like to ask whether anyone has done any work on tabulating the different textures of a colour. The difference between grey flannel, grey satin, grey paint and polished aluminium has to be seen to be believed.

**Mr. S. Rowland Pierce [F]:** I do not intend to ask any questions or to criticise

the paper. I think it is an excellent paper and I congratulate both Mr. Gloag and Mr. Medd on their work.

Speaking now as Chairman of the R.I.B.A. ad hoc Committee on this colour range, which began its work nearly five years ago, I should like to say that both Mr. Gloag and Mr. Medd were a tower of strength on that Committee. I should also like to pay a tribute to Mr. Wood of the I.C.I. and his colleagues in the paint industry organisations, who fought us quite a lot but agreed with us quite a lot and finally came to the British Standards Institution and agreed with this range. They are still uneasy about it, but they will get used to it in time. I should like to take this opportunity of saying how much we as an Institute owe to them in getting this range through. I think it is the first time that a particular thing has started with a suggestion from the paint industry, has been referred to the architects and then has gone to the British Standards Institution for completion.

I want to pay a great tribute publicly here to the Building Research Station and to Mr. Allen, Mr. Gloag and the others from the Station who joined us on our Committee and gave us such very great help technically and so much wise advice, some of which we took. It was a very difficult Committee. I think it would be enlightening if you could see a record of some of our sessions and see the number of ranges which were produced from all over the industry, from which we had to choose the colours to make up these 101.

**Mr. B. Bednarczyk [Student]:** I should like to ask what is the role of the architect in the great field of knowledge with which the lecturers have dealt this evening. There are painters, interior decorators and various other specialists concerned in this field. What do the lecturers think that the architect should do, when he designs a building, in order to make a perfect colour scheme?

**Mr. Grenfell Baines, A.M.T.P.I. [4]:** I should like to ask a question following on the one asked by Mr. Bednarczyk. Is there a perfect colour scheme for any form? I feel that there are any number of good colour schemes that could be married to a form. In connection with colour and form, I have discovered that one can camouflage forms quite effectively by dark hues.

**Mr. D. Barron, A.M.T.P.I. [4]:** One of the problems which most architects have come across at some stage or other, especially in the use of colour externally, is the fact that for the first six months the colour that the architect has chosen looks like the colour that he has chosen but within about a year it has hopelessly faded. Is it at all possible on this new colour range to give some supplementary information relating to colour, in order to give a guide to the architect on whether his colours will in fact remain fast and, if so, what are the situations in which they will do so?

**Mr. G. B. Oddie [4]:** There is one thing which I think it is most important to emphasise when so many architects are gathered together and have heard such an extremely interesting and informative paper. This point is concerned again, I am afraid, with the use of the British Standard colour range. The paint manufacturers are not, I suppose, entirely convinced that this is the final answer, and their misgivings will be confirmed if a number of architects come along and say: 'What about colours 103, 104, etc.?' or: 'It is fine to have 101 colours, but that is not really enough.'

I have recently had the experience of trying to do a colour scheme with the 101 range, and I must admit that I regretted the exclusion of one or two colours which had been in the Archrome range. I think that the architectural profession should support the R.I.B.A. and the B.S.I. by confining their requirements to the 101 colours in the selection of which so much work has been done.

**Mr. Kenneth Price:** One of the hindrances to the use of colour in interiors has been the suggestion that immediately one departs from white or very light colours the cost of artificial lighting soars to prohibitive levels. Is that in fact true?

**Mr. H. L. Gloag:** I should like to thank Mr. Douglas Jones and Mr. Wood very much indeed for their kind words—except for a slightly unkind word from Mr. Wood! He nibbled again at the Munsell references. The point is that we are not asking people to use them as day-to-day references for the ordering of paints. There is a perfectly clear number now for this purpose—B.S. 2660, colour No. 9–101, or whatever it happens to be. The Munsell Atlas has done a large part of its job in getting the range into order and from a design point of view we have tried this evening to point out the significance of distinguishing between hue, lightness and strength. If we are to take account of this distinction in practice, there is only one system at present, the Munsell system, which gives us what we want, and by having Munsell references on the cards themselves we can be more precise and constructive in the choosing of colours.

Mr. Allen mentioned tradition and our reference to character as a concept, and perhaps I can make a point about that and deal with one or two of the other questions at the same time. The basis for our approach is observation and subjective studies—quite distinct from studies confined to one particular science, such as psychology, wherein knowledge is extended in that field but is not necessarily related either to practical problems or to results of studies in a neighbouring science, such as physiology. The concept of character, which we have attempted to establish this evening, arises from subjective studies and represents a line of thought which we believe can serve to draw together the lessons not only from the various relevant sciences but from past architec-

tural successes as well, provided that we are looking for the essentials of success in the fullest sense. If we limit our observations of past architecture to the style or the quality of the sculpture or paintings in it we may overlook the qualities of the environment as it relates to human vision and not notice what its characteristics were in that respect, even whether it was gloomy or glaring. If it was successful in that respect too it is bound to be very well worth study to find out why.

With regard to the question about the psychological use of colour in hospitals or elsewhere, if we are intending to use colour for therapeutical purposes I think our best plan is to go to the doctors. I do not think that we can safely launch into experiments in painting rooms in different colours for the sake of colour therapy without first having firm information from the medical profession.

**Mr. D. L. Medd:** I think that what the speakers who have contributed to the discussion have emphasised is the many aspects that we had to leave out quite deliberately from our talk. We had a good deal of material prepared on some of the aspects which have been raised, such as the use of modern machine-made materials on exteriors, the accidental and deliberate colouring of streets, buildings and terraces, and so on. I think it would not be right to launch out into those subjects at this late stage.

A point was raised about the specification of the texture of colours or materials. I think that one thing for which the British Colour Council's dictionary is extremely useful is the appreciation of the varying textures of the same colour.

Mr. Barron raised a point about the specification of light fastness on the colours in the British Standard range. It would be quite wrong to be dogmatic about that in a standard range, because the properties of different paint specifications giving the same colour will vary very much, according to their make-up, but on the shade cards the British Standard range does give a general guide on what colours can be used without any risk and the situations in which they can be used—interior, exterior, glossy, matt, semi-matt and so on. I think that general guide is as far as one can go in a standard range, where the techniques of paint make-up are developing and changing and varying.

Mr. Baines and another speaker raised the question whether there was such a thing as an ideal and perfect colour scheme. I should like to say at once that I think there is not, and it is a very good thing that there is not. Surely colouring is a combination of science and artistry. We should be glad that artistry is there, and the fact that it does exist in the subject means that there will always be several excellent colour schemes possible.

**The Chairman:** I should like to add my personal thanks to the speakers and to say how much I admired the way in which they combined together in their talk.



# Architecture, Humanism, and the Local Community

By Henry Morris, C.B.E., M.A.(Oxon.), M.A.(Cantab.) [*Hon. A*]

Read at the R.I.B.A., 15 May 1956. Mr. Kenneth M. B. Cross, Vice-President, in the Chair

THE AGE OF INDUSTRIALISM AND DEMOCRACY has brought to an end most of the great cultural traditions of Europe, and not least that of architecture. In the contemporary world in which the majority are half-educated and not many even a quarter educated, and in which large fortunes and enormous power can be obtained by exploiting ignorance and appetite, there is a vast cultural breakdown which, as we approach universal literacy, will stretch from America to Europe and from Europe to the East. One effect of the breakdown to which I refer is to be seen in the disintegration of the visual environment in highly civilised countries in Europe with a long tradition of humanised landscape occupied by villages and towns of architectural character, sometimes of moving beauty. The march of squalor proceeds from the Eastern hemisphere to Africa and then to the West. In its grimmest and most cruel form it is to be found in industrialised countries, for instance in large parts of the United States.

The kind of visual environment which upholds and dignifies the episode of man is being destroyed in old countries like our own, and it is simply not being created in countries all over the world which are now being, or are about to be, industrialised. I do not stop to diagnose the reasons for this collapse and failure or discuss what the remedies may be. I hasten to point out that we are about to be confronted with another disabling deprivation in our surroundings. Let me first point out the extent to which the quantitative, the impersonal, the non-human is becoming almost wholly the condition of existence in a society whose main instrument is applied science and technology. This impersonal mechanical element is invading and dominating all spheres, the economic, the political and the social. I need only to mention nuclear science, automation, electronics, the monolithic state, giant industrial combines, speed, noise, the enormous proliferation of administration. (Up to 1916 the British Cabinet, which was engaged in governing not only these islands but the Empire, met regularly without an agenda and kept no minutes of its proceedings.) We are only at the beginning of this revolution in the life of man. Before long the whole of humanity on this planet will have passed from an agricultural and hand-craft civilisation to a highly industrialised technological civilisation.

I ought at this point to explain that I mean by architecture the ordering of the whole of our visual environment, and

in architecture thus conceived I include not only the architect, the engineer and the craftsman, but also the sculptor, the painter and the landscapist. One of the main functions of architecture in high civilisation has been to give significance to man's physical environment, either in terms of feeling through awe and the numinous (the sense of what is hallowed and sacred) or in terms of the human body and its manifold physical states—all of these being humane values of great importance and efficiency in the psychological, emotional and physical life of man. As Geoffrey Scott has said, we transcribe ourselves into terms of architecture: also, we transcribe architecture into terms of ourselves. The whole of architecture is in fact unconsciously invested by us with human movement and human moods. This is the humanism of architecture.

I am referring to all that in Well Building forms part of the quality and condition of *delight*.

What all this has meant in the life of man by giving it meaning and the wonder of an ubiquitous humane incarnation is not to be expressed, except perhaps in an utterance which itself would be a work of art. I trench here on the supreme importance of architecture in the life of man because of its public character. It is our subtlest form of compulsory aesthetic education.

I stand before you this evening as one convinced intellectually, technically and aesthetically not only of the inevitability of new forms of modern architecture, but eager and enthusiastic to embrace this chance of a new beginning. In this case the inevitable must not merely be accepted; it must be embraced. Such realism has always been a condition of an original flowering of art forms. The conjugation of the forms of architecture that have been traditional for some three thousand years has become feeble and dies in the presence of the new possibilities of structure and material now available to us. The functional and stylistic revolution of architecture has begun and will become universal. I will refer later to the changes in the social scene which have relevance for architecture. What I would like now to say as a layman is that modern architecture has made great advances in structural originality and in interior functional efficiency and aesthetic efficacy. It has not yet fully developed that external function of *delight* which the architecture of Europe has performed and which has to be replaced. I am thinking not only of the serving of humane values which Greek and

Roman Renaissance architecture and the classically informed architecture of England has performed down to Regency times. I am thinking also of the spatial arrangements that constitute the precinct in its various geometrical forms which have given delight and security to man's daily life.

Not only has modern architecture, I suggest, not yet begun to perform what I should call its external service to the local community. One gets the impression that architects are not sufficiently aware of this service as an imperative and a necessity. I have mentioned those states of psychological and physical pleasure which in the past it has been the external function of architecture to evoke. Modern architects have to search and experiment to find out how far the structural possibilities of modern materials are capable of performing externally this humane, sensuous, and aesthetic function. It is difficult for a layman to see how modern architecture may throw up decorative themes which are but discarded functional devices. Time alone, I suppose, can show that. What is crystal clear is that the expression of humane values in architecture depends more than ever on the architect continuing to be an artist as well as an engineer co-operating with other artists—painters, sculptors, designers of tapestry, and craftsmen. And the creation of these conditions of *delight* can be quite separate from structural forms and additional to such structural forms as may be found to have aesthetic and humane value.

I would venture to urge that modern architecture should not hesitate to use the geometrical forms that create the local precinct, the square, the three-sided court, the circle, the crescent, and that in doing so it will not involve itself in the futility of imitation. These forms have a continuing social use and convenience as well as aesthetic influence. There may be, awaiting discovery, other forms of capturing and organising space for the pleasure of man.

It is obvious too that the elaboration of external texture both as to form and colour will continue to be a method of giving humane values to architecture. I have spoken of the condition of *delight* in Well Building. I hasten to note, with emphasis, that it is still within the power of architects to invest modern structures, both within and without, with the sense of awe and the numinous which is the essential character of religious architecture. I believe that Mr. Basil Spence will create a cathedral at Coventry which internally and externally will be invested with these

qualities of the awesome and of the numinous as intense and moving as those to be found in the greatest of existing churches.

Again, in this world of increasing impersonality and sameness we must hold before our minds and imaginations the humane value in architecture of the unique work of art, the unique work of sculpture, whether fixed or free, the unique mural decoration, the unique fixed painting or tapestry, the aesthetic use of water in the unique fountain.

I sum up in a sentence the main contention I have tried to make. It is a profound necessity for civilisation that modern architecture should discharge its external function of ennobling and giving significance to our environment and to do so in terms of humanist values.

I pass on now to another aspect of the problem of creating and preserving in our environment the individual, the idiosyncratic, the idiomatic, the humane, in a world in which the anonymous and the impersonal increasingly envelop us. I am thinking of something physical, the *locality* (the creation and design of which is the architect's gift to us), and of something social, the *local community*.

Up to almost half-way through the 19th century only the governing minorities of societies were literate. Now not only Europe and North America but the whole planet is becoming literate. It is safe to assume that by the end of the 20th century everyone, except the mentally defective, will be able to read and write. At the same time, science and technology are being applied to all the processes of life. It is in this circumstance that our civilisation, both of the masses and of the minorities, differs from all previous civilisations. Applied science will bring food, clothing, health and conveniences to the undeveloped countries, as it has brought those benefits to existing industrialised countries. But technology and industrialism not only revolutionise agriculture—they kill the culture and the magical art which in rural societies sprang up side by side with agriculture. Where the victory of technology is complete, as in North America, the numinous is never created, and the numinous is a major condition of creative art in the experience of our race so far. In old countries like China and India the conditions of the numinous are being destroyed on a rapid and enormous scale; in countries like England, France and Italy the numinous is evaporating. Urban man, whether he lives in garden cities or the industrial slums, loses natural religion, his songs, music and legends, and the ritual dance.

What happens to industrialised man? He kills leisure time with amusement and, be it noted, amusement mainly passive and largely commercialised—professional sport, the cinema, the radio, television, football pools, gambling, newspaper reading, etc.—which excites and distracts but seldom or never recreates or gives instinctive satisfaction or happiness. 'Small wonder that Monsieur Bergson has called ours an "aphrodisiac civilisation". But the epithet

is not quite just. It is not that we worship Aphrodite. If we did, we should fear these make-believes as a too probable cause of her wrath. An aphrodisiac is taken with a view to action: photographs of bathing girls are taken as a substitute for it. The truth may rather be that these things reveal a society in which sexual passion has so far decayed as to have become no longer a god, as for the Greeks, or a devil, as for the early Christians, but a toy: a society where the instinctive desire to propagate has been weakened by a sense that life, as we have made it, is not worth living, and where our deepest wish is to have no posterity.' (Collingwood: *The Principles of Art*.)

Is it possible in any way to counter this habit of passive amusement which envelops man everywhere, and to give him the opportunity for activity of body and mind, and active mental, sensuous and emotional experience?

Our species, in solving the problem of poverty and overwork, is in fact moving forward to a more difficult and perilous stage in its history. For what is called social progress, we have now learned, is not a movement towards a static perfection; it is the exchanging of one set of solved problems for a new and more significant set of problems making greater demands on human originality and energy. The solution of the economic problem awaits no longer so much on knowledge as on an effort of political will and administration. Universal comfort, with wealth and repletion and with large margins of free time, is the next great problem of *homo sapiens*. The human house will indeed be swept and garnished for a fresh fate. Words cannot do justice to the urgency and the wisdom of thinking out now new institutions to enable communities to face this new situation. To do this we must arm ourselves with two conceptions which are, in fact, complementary. First, adult education is the major part of education. The centre of gravity in the public system of education should reside in that part which provides for youth and maturity. Secondly, the fundamental principle and the *final* object of all future community planning everywhere, whether urban or rural, should be cultural.

Planning is almost universally conceived of in terms mainly of the reorganisation of the economic and instrumental services of community life—industry, transport, housing, sanitation, water, light and amenities. Planning must provide, not only for the economic and instrumental order, but also for the cultural and social life of the community conceived in its widest sense. Apart from the programme of the schools up to the age of eighteen, those cultural objects are religion, the practice of mental and physical health, adult education, science and the humanities, social and physical recreation in community centres, and the consumption and practice of all the arts by adults whether in groups or individually. The most fruitful and far-reaching development of education in our generation will come as a result of conceiving of it not only as a matter of

psychology but also as the core of social and political philosophy; and of regarding education as the fundamental principle, and educational institutions as the essential material of concrete social organisation. The organisation of communities around their educational institutions is capable of universal application in any society and at any stage of culture. It is also the ultimate form of social organisation. It is the only method of escape from the impasse of modern society, in which some unity of communal life is necessary, but in which, by the operation of freedom of thought, a multiplicity of autonomous associations has grown up side by side with the State and replaced a single dominant view of life. A pluralistic society has taken the place of a monistic society, and architecture, both in the invisible hierarchy of values and in the visual order of our environment, is difficult or impossible to achieve. Some method for the integration of the life of the community with vital relevance to modern conditions is the prime social necessity of our age. The unity of social and spiritual life with its institutional and civic expression in architecture and organisation which was characteristic of the mediaeval town and the parish church and manor of the countryside has gone for ever. But the effect, in modern times, of pluralism of associations and beliefs has been one of social disintegration, less evident in the village than in the contemporary town with its social fissiparousness and resultant architectural chaos. Since the breakdown of the mediaeval civilisation we have, so far as the social expression of values in communal living is concerned, been living on credit, consisting of the legacies of the forms of the Middle Ages and of the brief and brilliant, but morally impossible, 18th century. Today we have to find a principle of integration which will allow unity of communal life and architectural expression and at the same time give free development to that pluralism of associations on which growth and freedom depend. In mediaeval Europe a common organisation for communal living was made possible by a system of common values and beliefs. In our time that element of unity in the life of society which is essential will be attained by the organisation of communities around their educational and cultural institutions. It is by some such synthesis that modern communities can again become organic, that the decay of civic life and architecture could be arrested, and the planning of modern towns on lines of imaginative significance surpassing the achievements of the past, be made possible.

The development, therefore, everywhere and for everybody, of a fully articulated system of adult education is the most important of all the tasks that lie before us. Such a development of adult education would include activities at a number of levels, intellectual, aesthetic, and recreative, with extensive provision for corporate life.

This prompts me to dwell with eagerness on certain implications which I believe have a profound bearing on the community

pattern in this or any country. The locality or neighbourhood in which we spend our daily lives and the local community to which we belong form the cell of society. It is of supreme importance that the neighbourhood should be full of life and vitality and have significance and meaning for all those who live in it. But vastly increased transport and opportunities for amusement have weakened the local group and its personal and corporate activities. This has happened as much in the cities as elsewhere. How is this vitality to be realised—this activity of body and mind, of emotion and feeling, both personally and in groups, that is the precious essence and core of culture at any level? It comes about when teacher and student, student and student, young and old meet face to face in lecture and debate, in song and dance; or in orchestras, choirs and plays. I have seen groups absorbed in workshops, laboratories, studios, libraries. And there are the virtues of eating and drinking together and conversation in the common room, and all that happens in games and on the playing fields and running track. A community that has these things enjoys the deepest satisfactions, which nothing can replace. It has an antidote to one of the greatest dangers of modern life, the pursuit of all kinds of passive mass amusements which kill time rather than recreate.

Adult education and recreation of the kind I have described are as necessary to everybody as food and air. So are the active practice and enjoyment of all the arts. I reiterate the belief I formed 34 years ago which has become stronger than ever: it is that the centre of gravity in education and the culture it transmits should be in that part that provides for youth and maturity. How is this to be brought about in the countryside and the cities? One main means to this end is to group our local communities round their colleges and secondary schools. It is plain common sense and wisdom to do this in the new housing estates, the new towns, and the expanded towns which are now being talked about. And it should be done not merely to avoid frustration, loneliness, and boredom, but with the positive intention of creating civilised communities able to live the good life. These colleges and secondary schools are an entirely new thing in our history. They cost vast sums. For instance, in a new town of 60,000 the secondary schools alone cost £1,500,000. In no other country in the world are such magnificent schools now being built. Let us, as the Minister of Education suggests, attach community wings to such colleges and schools so that, with their wealth of facilities, their accommodation and equipment, they can become part of the community pattern and centres of community life.

Such a pattern is valid for the countryside and city in any country at whatever level of culture. All over the world, and especially in Africa and the East, science and technology are being used to abolish poverty, to bring about better food supplies and housing, health and a longer life, and thus

to leave behind the life that is nasty, brutish, and short. This is one of the biggest changes taking place in the world today. Nothing can stop it. As Robert Bridges has said, 'They have seen the electric light in the West' (electricity symbolising the new world of technical invention) as we in the West once saw the star of Christianity in the East. But the application of science to material welfare should take place with a constant regard for human values. I believe that one of the surest ways of doing this, and one ready to hand, is to group communities physically round their cultural institutions so that these can form part of daily life and habit. We must all earn our living and proper training for that is a necessity; but it is also a desperate necessity, and not a luxury, that the satisfaction of the cultural and recreative needs of the local community should be a major aim in town and country everywhere.

I have dealt with the need of men and women in the local community everywhere for institutions to which they can repair to carry on that active personal culture and creative life of body, mind and feeling, which is life at its best and most real.

I return to the physical aspect of the locality. The creation of the locality with its precinctual character is a major task of architecture, but it has been completely forgotten in the speculative building and in the housing estates of the past half-century. Even today the precinctual locality is not provided for in the expansion of existing towns by local authorities. In the conglomeration of long meaningless streets with no social, religious or cultural significance, architecture becomes non-existent. The bus conductor at the terminus of a Birmingham housing estate cries out *Sahara*, and it is indeed in such social deserts that one feels the full impact of the exclamation of the poet, 'Ah, what a dusty answer gets the soul. . . .' I can make my view more explicit by referring to what has been happening in the New Towns.

We can no longer achieve in them the grandeur and impressiveness of domestic architecture such as characterises for instance Bath, Regent's Park and Bloomsbury. If we are to give our new towns and the housing estates architectural significance and a civic sense we are bound to use our educational and cultural buildings as focal points. This involves the imaginative location of colleges, schools, libraries, community centres, art galleries. I am glad to say that in most of the new towns the college of adult education has been placed in the town centre so that it is given a cultural as well as an administrative and commercial character. There may be a theatre and a cinema, a hotel, cafés, restaurants and the open market. Thus the town's central square by day and night may be alive like St. Mark's Square in Venice. This blend of daily life and civic administration with the main cultural buildings is irresistible as a conception and in practice, and continues an ancient tradition of European civilisation.

Likewise the neighbourhood centres, each serving a portion of the town, are spacious precincts for shopping, with an inn, a community centre or hall, the branch library with the large secondary school adjacent or near at hand. Thus, in the new towns, cultural buildings, which are the largest public buildings, have been deliberately located to create an atmosphere of civic significance. In one new town, its nine large secondary schools have been located in groups of three, on three large sites or campuses, lying between the centre and the circumference of the town. Each campus and its buildings, gardens and playing fields is a cultural focal point, lending dignity to the surrounding streets and housing. Even infant and junior schools can be and have been sited so that they are grouped significantly with the surrounding houses.

The majority of our new educational buildings are being built in modern and not traditional terms. It is impossible to overstate the need that such educational buildings should, through their external form, composition and texture, contribute significance to their surroundings. To the extent to which a school building does not serve these humane values it is to that extent an architectural and aesthetic failure in an external world that is becoming increasingly impersonal and mechanised. I should like to observe that we may fail to create this humane function in modern architecture if we are too much influenced or dominated by considerations of speed. It is the techniques of rapid building that have done as much as anything to lead architects to sacrifice the humane external function of school buildings. In a decade or two the bad effects of an unnecessary and doctrinaire worship of speed in school buildings will become painfully obvious.

It is with such a policy, it seems to me, that town and country planning and architecture can enable a town or a group of villages to provide not only an environment, but a way of life, in which the personal, the intimate, the humane are given full expression, and where architecture as an art can make its fullest impact on young and old daily and throughout life.

Here let me state a belief which arises out of a working life spent in public education, from the beginning of which I was seized with the vital importance of architecture. That belief is that architecture, as the great public art present to us all during the whole of our waking lives, is part of the essence of education. Architecture, the understanding and particularly the appreciation of it, should occupy as important a part in education at school and in adult life as our English mother tongue and literature.

Let me try to sum up in a sentence or two the views that I have expounded.

We are living in a world dominated by applied science and technology. The necessity for the artist, who sustains humane and personal values, is greater than ever. Certain creations of the artist, such as music, literature and painting, we are able



to obtain and enjoy in our private capacities. But architecture as the great public art to whose influence all are subject can only be provided by Society, and be it noted at the hands of the architect who is an artist. Modern architecture, which is the result of new structural principles and materials with a mechanical logic of their own, is confronted with an imperative which it must obey. This is that, in addition to its practical utilitarian functions, modern architecture must nourish humanist values, especially in its external service of expressing the significance of man's activities, of giving nobility to his environment, and ministering to his delight and appetite for beauty. It is not to be contemplated that modern architecture will fail to do this.

The task is indeed formidable. Already we see that the new textures, for the most part, are unresponsive to the unimaginable touch of Time. There are those who fear that the new mechanics of structure and the new materials may defeat the artist. Such is the challenge to modern architecture and such is its creative opportunity.

## DISCUSSION

**Mr. J. Murray Easton [F]**, in moving a vote of thanks to Mr. Morris, said:

It is a special pleasure to be asked to propose a vote of thanks to Mr. Henry Morris for reading to us this paper, which is the fruit of a lifetime of devotion to the ideal of providing means whereby people may learn to lead a full life.

I first met Mr. Morris in the early 'twenties, thanks to the absent-mindedness of a Cambridge don, the late Mr. Mansfield Forbes, known always as Manny. About midnight he suddenly recalled that he had invited two people to occupy his one spare bed. The other fellow had got there first, so I was led protesting feebly to Mr. Morris's house. The lighting pattern of the windows clearly indicated that the owner had retired for the night, but this did not bother Manny Forbes, who threw handfuls of gravel at the lighted window. At last Henry Morris—I think he ranks with those whom one does not think of as Mr.—came down. He displayed neither surprise nor resentment, though I was a stranger thrust untimely upon him, so I had the privilege of meeting one who had already my warm admiration and who was soon to be known everywhere as a pioneer of education in its widest sense.

To some Directors of Education Cambridgeshire, nearly all farms and villages, might well have seemed to lack the numbers provided by more densely populated counties. But it was Henry Morris's gift to see that the villages were the very places that most needed a fuller life and to discover the most practical method of welding the young of the county into social units by the creation of centres in which they could find the space and the tools and the guidance necessary for doing the things they wanted to do, and in company.

I am not sure that many architects realise the importance of what is happening in Cambridgeshire and how Henry Morris

brought off his master-stroke and managed—was it against fearful odds?—to have Gropius and Maxwell Fry appointed to design the college at Impington. Three had already been built. The experimental stages had been gone through. It remained for these architects to give imaginative and lucid expression to Henry Morris's ideas and to add their own powers and transmute physical requirements into a working art. In doing so they made history.

If Henry Morris has scarcely alluded to these colleges it is because he has chosen a wider field, the architect's place in society and those fundamental things with which most of us as architects ought to be concerned. To speak to us about things so constructively and with such cogency and sincerity is to pay us the greatest compliment a non-architect can pay to our profession. He is well aware that we are not all that we should be, some even less than others. Yet he has declared his trust in us to face the problem of an increasingly materialist tendency and not abandon hope.

The belief in progress as an almost automatic process had never been held until the 19th century. It is no longer held. Regression, rather, is the natural rule, and history confirms that view. Today regression in mind and spirit runs side by side with the lack of advance in the direction of a cultured civilisation like two escalators going in opposite directions. It must be, as it has always been, the task of a minority to apply all its creative energy to reversing that tendency, and Henry Morris has made clear the part we play in it.

I beg to move a most cordial vote of thanks to him for writing and reading a very notable paper.

**Mr. G. Grenfell Baines, A.M.T.P.I. [A]**, in seconding the vote of thanks, said:

I have the greatest possible pleasure in adding to this tribute so ably and gracefully proposed by Mr. Murray Easton.

Once again—and I say once again advisedly, because all through his distinguished career he has been an inspiration to architects—by this paper of his he has helped us to lift ourselves from the desk and the board, from the very necessary and pressing details that do possess us these days, to our real purpose, our real aim, and that is to minister to life and the delight of life.

He spoke about awareness of our social responsibility and remarked that sometimes we do not appear to be aware of its existence. He has drawn our attention to the greater part a building can play—I might have said the greater partner that building can be—in contributing to this life. In me in particular he has awakened a response to the need—the really pressing need—we have as architects to take more practical interest in planning. I am quite sure that while we must design fine buildings we must realise that they are really a contribution to the whole environment, and that is what matters. However fine they may be in themselves, if there is something wrong with their grouping they are not working to-

gether in terms of helping towards this fuller life that I too will not attempt to define, it having been done so well already. If we do not pay attention to that we are failing in our main purpose.

He has spoken of the collective contribution that building can make to neighbourliness, and I cannot help thinking of the way in which preoccupation with machines, about which he warned us, is really, as he said, disintegrating not only the social environment in which we live but also its visual effects. One has only to think of how one particular machine may adversely affect our way of life; of how, in learning to drive a motor car 20 miles, we forget how to walk to our neighbour; of how in pandering to it in planning we give wider turning circles, straighter roads and wider lines of vision, until our housing layouts are completely disintegrated. Well and truly insulated in our mobile tin suit cases we become absolutely incapable of sensing the excitements of propinquity in the grouping of buildings, that we can and might enjoy walking about our older towns.

I liked a number of terms the speaker used—particularly the one about the elaboration of external texture. I wonder how far Henry Morris would really like to take that phrase. It did remind me of the architecture we are getting today as technique evolves. Perhaps he might, in responding to the questions, tell us a little more about this elaboration of external texture.

Finally, he reminded us that as architects we have the responsibility of sustaining human values in this scientific and technological age, an age to which we are moving whether we like it or not.

May I, Sir, add my grateful thanks to those of Mr. Murray Easton for reminding us what we are here for: that is, to serve life as well as technique. I have great pleasure in seconding the vote of thanks.

**Mr. Graeme Shankland [A]**: I am one of those who have also been very privileged to sit at the feet of Henry Morris since I first met him in 1938, and perhaps if I have learnt one thing from him it is the importance of what he was talking about tonight. In particular, working in local government as he has done all his life, he has tried to achieve these things. In this context his address tonight is topical to this very second, because there has been, I think, in the last five or ten years particularly, compared with the period 1945-46, an abdication on the part of architects from the field of town planning and civic design. It is high time they took up the cudgels again, though there are very good reasons for the abdication.

The technical complications, particularly the administrative complication of trying to achieve anything, if only of preventing 'subtopia', are very difficult. The necessary reward is perhaps less. It is less rewarding in terms of the time scale, because as compared with three years from conception to completion it is ten years or more for a portion of a city. For all these and various other reasons there has been abdication and

Henry Morris has done a most valuable task in reminding us of our real job and doing a great deal more. He has suggested to us a programme, and I hope that programme will be studied. It has certain affinities to the concrete proposals Sir William Holford put forward about a year ago. Some of us may have heard his views on how to tackle the problem of the reconstruction of our cities. Proposals have been made as to how this unity stressed by Henry Morris can be achieved.

**Mr. Paul Mauger, M.T.P.I. [F]:** It occurred to me when watching a great procession last Sunday of the Holy Blood, right through the city of Bruges, how the mediaeval look of these old cities is often revived in these days by the momentary exclusion of the traffic from most of their streets.

But quite apart from that, the leisurely procession through the streets up to the town hall and the way in which it did seem to stop the roaring traffic in the city was most impressive. It made me wonder whether one of the functions of urban planning ought not to be to provide in the city roads through which vehicular traffic should not pass—whether the provision of such road systems should not be one of the main concerns of the urban planner, so as to get back that sense of dignity and leisure

and ability to stand and enjoy things that must have been in those old cities.

**Mr. F. T. Bush [A]:** As I sat here, I wondered whether Henry Morris was not a direct descendant of William Morris. One seemed almost to hear William Morris in some of the things he has said here tonight.

I should like to ask about one thing. Among other things I think Henry Morris said that the parish church had gone for ever. I wonder whether he would give us an indication of what he meant by that. I happen to live in a very beautiful district—or what was a very beautiful district—of Blackheath, which is becoming very much swamped by neighbouring boroughs. Hearing what Henry Morris had to say about Impington in Cambridgeshire, I wondered whether he could give us any notion as to what our particular task should be. Where do we go from here to achieve the aims and ideals he has put before us?

**Mr. Henry Morris:** I want to say how grateful I was for the opportunity to come here this evening and also to thank you, Sir, and the mover and seconder of the vote of thanks.

The main point I wanted to put before you was the problem as to whether the materials, the methods—the mechanical methods—of materials and the actual

materials of contemporary modern architecture could have a more humane aesthetic appeal. Can for instance these materials be dealt with by the magical touch of time to get a patina?

We are not at home with modern architecture. That is the truth of the matter. It arouses our curiosity. It arouses our interest. We are not in love with it. The reason is that modern architecture, exciting as it is as an adventure, has not yet found its real aesthetic function.

Now it may be that this job can never be done. It may be that the materials that are used by contemporary architecture will have to remain rather non-humane. It may not be possible to get that touch of time that helps us to create patina. I think this is the most profound problem before contemporary architecture. The mechanical tricks, the ingenuity which can conjugate contemporary architecture, take a great deal of ability. But we await more and more the genius in modern architecture who will show us that it is possible with the new mechanical possibilities and materials for them to be made the instrument for humane delight; and the point I want to make—and have not made—is that if architecture fails to be all right in that sense the loss to humanity, surrounded as it is by the non-humane, will be beyond description and computation. It will have very serious effects for us as a race.

## High Buildings in London

The London County Council at its meeting on 15 May accepted the following Report prepared by its Town Planning Committee: Chairman, Richard Edmonds

ONE OF THE MOST INTERESTING changes in the London scene in the future is likely to be the development of high buildings. At present three-quarters of London's buildings are four storeys or less in height and it is only in the inner areas and district centres that higher blocks occur. Even so there are very few buildings over 100 ft. in height except for church steeples and architectural features on public buildings. This state of affairs has been due more to public opinion than to any legal or constructional considerations. It was not until 1890 that the Council obtained powers, later included in the London Building Act 1894, to limit the height of buildings. Since then there has been little change in the legal position; the present requirement is that the Council's consent is necessary for the erection of any building exceeding 100 ft. in height. Since the war it has become generally (but not universally) accepted that there is no objection in principle to buildings over 100 ft. being erected in suitable positions.

With modern techniques of construction it has for some time been possible to build high; indeed, the height of buildings is now limited more by economics and the weight-bearing capacity of the subsoil than by

purely constructional consideration. The subsoil in London is very varied but in many parts it is thought that blocks up to 300 ft. high could be built without undue cost for foundations. Care would obviously have to be taken of the effect of deep foundations on tube railways or other underground installations. The effect of the Council's standards of plot ratio and daylighting control is to encourage high buildings in the form of an open spine or tower, rather than a lower, bulky type of building surrounding internal courtyards.

The requirements imposed by the Council under the London Building Acts for securing proper arrangements for lessening danger from fire in tall buildings are satisfied by the introduction at appropriate intervals of 'tower staircases' combining the staircases and lifts in self-contained fire-resisting units which must be next to the open air from top to ground and be immediately accessible to fire brigade appliances at ground level. In these respects Building Act requirements have some effect on the lay-out, which in turn affects the general design.

The Council itself has included proposals for high buildings in a number of its schemes for areas which are being com-

prehensively developed; for example, the plans for the South Bank area include an office building of over 300 ft. carefully sited as a vertical feature in a group of public and semi-public buildings of a general height of about 100 ft. In residential areas the Council has been building tower blocks and slab blocks of flats of eleven storeys grouped in various ways, and further schemes for higher blocks are now under consideration. Other areas of comprehensive development, such as Barbican, now under consideration by the City Corporation, offer similar opportunities for the siting of high buildings.

A more difficult problem occurs where a private developer submits proposals for a single site and such applications are likely to be received in increasing numbers. Compliance with building regulations must be secured and there is no question of permitting any departure from planning standards or allowing increased plot ratio because of the height of the building. Apart from these aspects such applications pose a fresh series of planning problems, the major issues being the location of such buildings in relation to the town as a whole and their effect on their immediate surroundings. We

have therefore thought it necessary to consider the lines on which proposals for such high buildings shall be dealt with because the matter affects not only the developers and occupants of such buildings, but also the owners and occupants of nearby buildings, the man in the street, and all who are concerned for the preservation and enhancement of the London scene. Here we observe that a building under 100 ft. might be a 'high building' in the outer areas of London where the general level of development is much lower; in such areas buildings of even six storeys can make an appreciable difference to the urban scene and need careful consideration.

**The practical advantages and disadvantages of tall buildings.** The building uses most suitable for vertical forms of development are offices, flats and hotels. It is however possible that in the future, provided sites are sufficiently large, composite buildings for two or more uses, combined with buildings of a public character (e.g. cultural, religious or recreational), will achieve importance in the large-scale development of central areas. There are interesting examples abroad of such buildings, e.g. the Rockefeller Centre, New York, and the Palace of Culture, Warsaw. Proposals of this kind have already been made for London, viz. High Paddington and High Barbican. High blocks, considered singly, cost relatively more than lower blocks, even when the fullest advantage is taken of modern techniques of planning and construction; but the extent to which they are built may depend on other factors, including the cost of land and, in the case of offices and hotels, prestige and advertisement value. Owing to the high cost of lifts and the considerable area they require, taken together with staircases, ducts and other vertical services, it seems likely that proposals for tall buildings may tend to be for slabs rather than towers, and to be associated with blocks of medium height which will share the services and thus increase the ratio of usable space to circulation space.

The advantages of high blocks may be summarised as follows: they make possible open lay-outs with green open space and the maximum public use of the ground; good lighting; good views from the upper storeys; good air; freedom from noise; architectural interest and contribution to London's sky line, if well sited; in residential areas high blocks of flats give a high density for a small site and make possible a mixed development for the whole area with a higher proportion of lower dwellings with gardens.

The disadvantages of high blocks are: if badly sited they will tend to disrupt existing architectural groups or may produce a change of scale which may destroy the dominance of public buildings; they may impair famous views across London from high points such as Hampstead Heath; they may overshadow adjoining buildings to an undesirable degree; smoke from lower buildings and factory chimneys may blow into their windows; as previously

mentioned, there may be a tendency to build slabs instead of point blocks, and buildings in slab form tend to be more dominating than point blocks of the same height and need great care in design if they are not to be out of scale with their surroundings.

**Effect on adjoining development.** The fact that proposals for high buildings may take the form of slabs rather than point blocks is of considerable importance in considering the effect of high buildings on their neighbours. A slab casts a larger shadow than a point block, especially if it runs from east to west, and analysis shows that it would be possible to design a high building completely in conformity with the present standards of daylighting which would seriously affect its neighbours, especially if other high buildings were later erected nearby. We are considering whether new standards should be formulated to cover these possibilities; meanwhile, we shall examine proposals very carefully from this point of view and we shall have particularly in mind the interests of occupiers of premises in the vicinity. In addition to the regard we shall pay to these interests under planning law, the owners and occupiers of properties in the vicinity may have common law rights to light and rights under covenants which they can exercise for their protection; furthermore the owners and lessees of properties within a hundred yards who may deem themselves aggrieved by the granting of consent to the erection of a building over 100 ft. in height have the right to appeal under section 52 of the London Building Act 1930 and there have been cases where developers have been prevented from erecting buildings in their approved form because of such appeal action.

**Location of high buildings.** The exact position of high buildings is extremely important. There are in London a number of situations where a high building might make a positive contribution to the urban scene, for example at civic centres and other focal points, and on suitable sites in the central area and along the river. In other places the introduction of high buildings might be detrimental, for example where they would spoil an existing urban group. There are a large number of urban groups such as the London squares, where a badly-sited high building, even some considerable distance away, might do lasting damage and we consider it to be the Council's duty as planning authority to keep a very close watch on all such proposals. Elsewhere, where the street pattern is not regular and the development is haphazard, it may well be that high buildings would not be visible over wide areas and would not compete with national monuments and other significant groups. Provided high buildings in such areas conform to planning standards and do not affect their close neighbours detrimentally, there need be no objection to them. In fact, the open treatment at ground level rendered possible by building high may prove an added amenity.

The relationship of tall buildings to

London's parks and open spaces and to the river constitutes a problem of its own. On the one hand there is much to be said for taking advantage of the openness; on the other it is important in many open spaces to avoid a feeling of 'boxing-in', and consideration must be given to the overshadowing of the park and the effect upon trees.

**Conclusion.** To sum up, we consider that it is not possible to prescribe rules to govern proposals for the erection of high buildings, but that each proposal must be considered on its merits, and that an assessment of these might be approached by posing a series of questions, as for example:

- (1) Whether the building will disrupt the pattern of existing development or obtrude itself on the skyline to the detriment of existing architectural groups and landscape.
- (2) Whether its position has any positive visual or civic significance in relation to the town as a whole.
- (3) Whether the site is large enough in relation to its surroundings to allow the erection of a suitably designed base of lower buildings or the provision of open space.
- (4) The degree of overshadowing of the adjoining area and the extent to which the building would detract from the development possibilities of the adjoining area.
- (5) Whether the building makes a better contribution to the general character of the area than possible alternatives and whether it relates satisfactorily to any other existing or proposed high building in the vicinity.
- (6) The relationship of the proposed building to existing and proposed open spaces and to the River Thames.
- (7) Whether, in view of its prominence, the design and materials proposed for the building are of sufficiently high quality.
- (8) Whether its illumination at night could detract from London's night scene.

We consider also that it should be made clear to developers that the Council does not recognise any right to erect high buildings; that besides the Council's normal planning standards, including plot ratio, the provisions of the London Building Acts, mainly relating to fire precautions and to the rights of owners in the vicinity, will have an important bearing upon the design of the building and will involve seeking separate consents; and that before the Council gives planning permission for the erection of buildings which appreciably exceed the height of surrounding development the applicant must make a case based on the considerations mentioned above.

In deliberating upon this subject we have had the benefit of the views of the Royal Fine Art Commission who are at one with us in thinking that there can be no hard-and-fast rule and that each proposed building must be considered on its merits.



# Review of Construction and Materials

This section gives technical and general information. The following bodies deal with specialised branches of research and will willingly answer inquiries.

The Director, The Building Research Station, Garston, near Watford, Herts.  
Telephone: Garston 2246.

The Officer-in-charge, The Building Research Station Scottish Laboratory, Thorntonhall, near Glasgow.  
Telephone: Busby 1171.

The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks.  
Telephone: Princes Risborough 101.

The Director, The British Standards Institution, 2 Park Street, London, W.1.  
Telephone: Mayfair 9000.

The Director, The Building Centre, 26 Store Street, Tottenham Court Road, London, W.C.1.  
Telephone: Museum 5400 (10 lines).

The Director, The Scottish Building Centre, 425-7 Sauchiehall Street, Glasgow, C.2.  
Telephone: Douglas 0372.

**Solid Concrete Slab Floors.** The Commonwealth Experimental Building Station of Australia has issued Technical Study No. 38, which deals with concrete slab floors on the ground and their use in domestic construction. Although conditions in Australia are of course different from those in this country, they are in this particular subject sufficiently like ours to make the study interesting reading, especially as it mentions matter not usually found in textbooks of the general kind. We therefore quote the following remarks.

Certain soils, commonly referred to as plastic soils, possess properties which are responsible for such extensive volumetric changes that slabs and walls erected on them may be seriously damaged.

The variations in volume of the soil outside the slab rarely if ever coincide with those underneath the slab, and are not necessarily consistent around the perimeter of the building. Thus differential movements occur continuously in the soil outside the slab and underneath the slab, as the result of changes in soil moisture content. These differences in volume from position to position result principally from the protective action of the slab, which prevents rain sun and wind from acting upon the soil surface. During rainy periods the uncovered ground swells, and water, soaking sideways under the slab, causes an upward force which lifts the edges of the slab, while the centre of the slab is not subjected to a similar force. During dry weather the unprotected ground dries out, and moisture moving out from the edges of the slab causes the soil to shrink away from the edges, resulting in loss of support around the perimeter of the slab.

These phenomena are further complicated by the desiccating action of vegetation and the natural transfer of moisture from warmer to cooler parts of the soil. Where the soil under the slab is warmer than that outside—a probable occurrence in winter—moisture will migrate away from the slab. Under the reverse conditions, possible in summer, moisture will move towards the centre of the slab. When it is realised that under some conditions in Australia an upward swelling pressure of up to 2 tons

per sq. ft. can be exercised by the soil when wet, it is clear that the design of slabs for such conditions presents a difficult engineering problem.

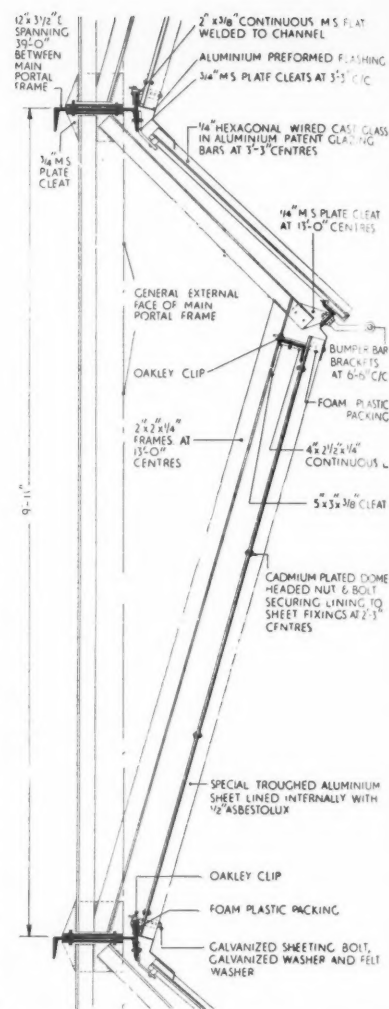
In the circumstances just outlined, it is obvious that when a slab which has not been specially designed for the purpose is placed on unsuitable soil, it is almost certain to crack or defect to such an extent as to damage the building seriously.

**Natural Lighting in a Power Station.** Industrial buildings are often lighted by a long range of windows with an infilling panel below, all on one vertical plane. The result is that little light strikes the infilling and there is fairly strong contrast between the bottom of the glazing and the top of the panel. At the Marchwood Generating Station, near Southampton, the consulting architects, Messrs. Farmer and Dark [FF], have avoided this effect by adopting a sawtooth arrangement in which the range of glazing is inclined outwards and the infilling panel slopes back to the general vertical line. Some of the light therefore falls on the inward-sloping panel, strong contrast is absent and a general effect of lightness is given to the walling as seen from the interior of the station. The accompanying illustration shows the arrangement.

**B.S.I. Handbook No. 3.** In the January issue of the JOURNAL this year it was announced that the British Standards Institution had brought out Handbook No. 3, *Building Materials and Components for Housing*, in loose-leaf form, and that additional and revision sheets would be issued periodically.

The first packet, containing 79 addendum sheets, became available on 23 May; they cover summaries of eight British Standards not previously included in the volume and the remaining sheets take account of revised Standards and corrections to published summaries, with up-to-date contents and index sheets. The information has been corrected up to 1 March of this year.

This addendum packet is available from the B.S.I. price 15s. post free. All copies of the Handbook distributed after 23 May at the nominal price of £3 10s. 0d. will contain the new and replacement sheets.



Natural lighting at Marchwood generating station.

**Light and Lighting.** The Illuminating Engineering Publishing Company Ltd. have published the April/May issue of *LIGHT AND LIGHTING*; it includes the 'International Random Review', illustrating developments and progress in the field of lighting overseas during 1955. A similar review appeared in the April 1955 issue of *LIGHT AND LIGHTING*, which was quickly sold out; extra copies have now been printed and are available from the company at 32 Victoria Street, London, S.W.1, price 2s. 6d. post free. The annual review of lighting progress in this country appeared in the January issue.

**The Modular Catalogue.** The sixth issue of the catalogue has now been published. It comprises sheet No. 23, laminated timber arches, Messrs. Kingston (Architectural Craftsmen) Ltd.; sheets 24 and 25, aluminium windows, Thermagard Mark III, Messrs. Gardiner, Sons & Company, Ltd.; and Sheet No. 26, structural roof panels, Messrs. Thermacoust Ltd.

**Building Bulletin No. 14.** This Ministry of Education Bulletin dated February 1956 deals with day schools for educationally sub-normal (E.S.N.) children whose condition is sufficiently severe to warrant special schools. Most E.S.N. children are educated in ordinary schools where adaptations of curriculum and method are made to suit them.

Because of the special attention which E.S.N. pupils need, the maximum size of each class is twenty, and as not more than 1 per cent of the school population in any area is expected to attend day special schools they will usually be small; the Bulletin however does not deal with schools of less than five classes; such a school would probably contain about 40 juniors and 60 seniors, of whom some 25 seniors would be girls and 35 boys; this excess of boys is fairly constant and must be allowed for in the planning.

Children may be recommended for special schools at any age after two, but in fact few are admitted until after they are eight; in recent years roughly 60 per cent of the children have been 12 years of age or over. The architect planning a day E.S.N. school must obtain a clear direction about the age-range and types of classes to be catered for. E.S.N. children learn best through contact with people, with simple mechanical contrivances and varied materials with which to work; through these they learn to reason from the many practical problems which arise. Therefore they need plenty of space in which to carry out a varied programme of work. The layout of the rooms and the facilities within each should be designed to foster ideas of growth and progress within the school society and arrangements for dining and for personal care should be such as to encourage good habits of family living.

The Bulletin includes schedules of accommodation, examples of seven recent plans with details of size and net cost per place, and an appendix in which the accommodation in the seven examples is split up into areas of the respective apartments.

The Bulletin is published by H.M.S.O. price 2s. net.

**R.A.F. Aerial Photographs.** All education establishments in the United Kingdom may now obtain copies of R.A.F. aerial photographs at concessionary reduced rates. Members of the staff and students at such institutions will also be granted this concession for prints required in connection with their studies or research. The charges range from 6d. for a contact print or enlargement up to 6½ in. by 4¾ in. or equivalent area to 6s. for a print up to 30 in. by 20 in. or equivalent area. Orders should be addressed to the Under-Secretary of State, Air Ministry, S.4(d) Whitehall Gardens, London, S.W.1. No remittance should be forwarded until an official account is received.

**Post-War Building Studies No. 33.** Under the title *Basic Design Temperatures for Space-Heating* this Study deals with the external air temperature and its duration

which should be assumed in the design of space-heating installations in the United Kingdom, intended for continuous operation. The reasons for the investigation resulting in this Study were that 'in order to establish the rating of a heating installation necessary to maintain a given internal temperature in a building it is necessary to select an appropriate temperature representative of the lowest external air temperatures likely to be encountered, and against which the internal temperature has to be maintained. This temperature, however chosen, is hereafter referred to as the *basic design temperature*.'

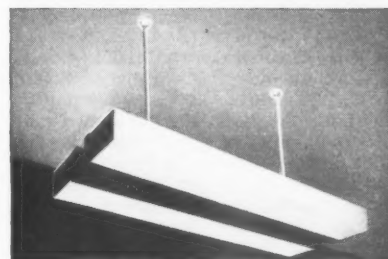
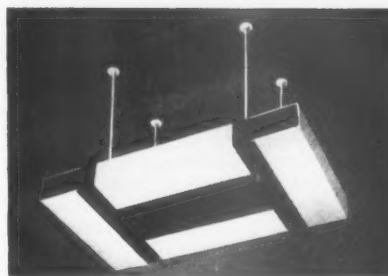
Investigations were carried out to ascertain the effects of altitude, exposure, radiation, humidity, wind speed, rain and melting snow, and type of heating system. Importance is attached to thermal time-lag in relation to type of building. Appendices give notes of guidance and meteorological data statistics. The Study is published for the Ministry of Works by H.M.S.O. price 3s. 6d. net.

**Domino System of Lighting.** The Thorn Electrical Industries Ltd. of 233 Shaftesbury Avenue, London, W.C.2, have introduced a new system of fluorescent lighting which they call the Atlas Domino System, specially designed by John Reid, M.S.I.A. [A]. It embraces a few basic units which can be arranged domino-fashion in many ways. The unit comprises a matt black sheet steel chassis and a white opal Perspex diffuser cover, and it can be suspended from the side or the back of the chassis. Adapter brackets and plates enable the units to be mounted side by side, back to back, horizontally in various patterns, and vertically as single or multi-unit pendants. Tungsten fittings may be introduced and the system can be adapted to louvred or other illuminated ceiling techniques.

The chassis takes Atlas Glow-switch or Quickstart control gear and either one or two fluorescent tubes 5 ft., 4 ft., or 2 ft. long, supported by spring-loaded bi-pin lampholders. The diffuser can be easily removed for cleaning.

**Aluminium and its Alloys.** The Aluminium Development Association have published their December 1955 edition of Information Bulletin No. 2. *The Properties of Aluminium and its Alloys*; it is related to the 1955 revision of British Standards for aluminium and aluminium alloys for general engineering purposes; it also includes data for alloys as specified for aircraft use. Proprietary names are given under which many compositions are supplied. Notes on characteristics affecting design include brief data on elasticity, strength in compression, shear stress, bearing and fatigue strengths, but for full details the relevant British Standards should be consulted. The bulletin is priced at 7s. 6d.

The A.D.A. have also produced two leaflets dealing with the 1955 revisions of British Standards 1470-77 and 1490, and these are obtainable free of charge from the Association, 33 Grosvenor Street, London, W.1.



Two examples of the Atlas Domino system of lighting

**Fungus-Resisting Plywood.** Messrs. Thames Plywood Ltd., of Barking, Essex, announce the introduction of a full range of plywood impervious, it is claimed, to fungi, wood-boring insects and marine borers. Before the laminations are glued and bonded together each is treated with a solution containing sulphates and chromates, thus all the fibres are rendered resistant, including raw edges, and the finished plywood can be cut and shaped without damage to its protective qualities. It conforms to the British Standard 1203 test.

The plywood can be supplied from ⅜ in. to 2 in. thickness and up to 9 ft. by 30 ft. The market name is Thames-Celply.

#### British Standards Recently Published

**B.S. 2691. Part 1. 1955. Plain Hard Drawn Steel Wire for Prestressed Concrete.** This is Part 1 of a projected series of specifications for steel for prestressed concrete designed to rationalise requirements for high tensile hard drawn steel wire used in prestressed concrete. The technical requirements are set out for the supply of such wire in six recommended sizes and having tensile ranges up to 140 to 150 tons per sq. in. Price 2s. 6d.

**B.S. 1553: Part 4, 1956. Graphical Symbols for Heating and Ventilation.** Graphical symbols are used extensively in the heating and ventilating industry and those shown in the Standard are based on what is considered to be the best British practice, their principal use being for plans for installations drawn on architects' plans. They can also be used for schematic diagrams and isometric drawings. There are six sections in the Standard; the first four deal with heating and hot water supply and the last two with ventilation, air conditioning, dust and fume extraction. An index of symbols is included. Price 3s. 6d.

# Practice Notes

Edited by Charles Woodward [A]

**IN PARLIAMENT. Building (Capital Costs).** Asked the capital cost of a 3 bed-roomed council house for the years 1950, 1951, 1952, 1953, 1954 and 1955, the Minister of Housing and Local Government replied: The average cost of 3 bed-roomed council houses for which tenders were approved in the 4th quarter of each year was £1,310, £1,396, £1,380, £1,383, £1,381 and £1,442. (1 May 1956.)

**Building Research Station (Modules).** Sir A. Bossom asked the Parliamentary Secretary to the Ministry of Works, as representing the Lord President of the Council, why the Building Research Station is now attempting to discourage the adoption of any module, and is intending to design the United Kingdom test buildings in the European Productivity Agency programme without a module, in spite of their agreement with the other European Productivity Agency countries of August last.

Mr. Bevins: I am informed that the Building Research Station is not attempting to discourage the adoption of any module, but is reserving its own decision until the experimental work now in progress is complete.

In design the buildings to which the Hon. Member refers, the Building Research Station is applying knowledge of the use of modules and co-ordinated dimensions, without confining itself to the use of any particular module. This is not precluded by the proposed agreement with other European Productivity Agency countries. (4 May 1956.)

**Building Contracts (Fixed Price Tendering).** Captain Duncan asked the Minister of Works to make a statement about the possibility of returning to fixed price tendering in Government building contracts.

Mr. Buchan-Hepburn: I have had discussions about this with representatives of the National Federation of Building Trades Employers, the Federation of Civil Engineering Contractors and representatives of the building and civil engineering trades operatives: and explained that arising out of the Government's wish to move towards a return to fixed price tendering it had been decided as an experiment to invite tenders on a fixed price basis for selected projects of values not exceeding £100,000 for which my own Department is responsible.

I feel sure, in view of the general advantages to be gained by all concerned, that I shall have, in this experiment, the goodwill of the industries concerned.

Captain Duncan: While welcoming that as a start, may I ask my right hon. Friend whether he is aware that it will be very welcome in Scotland, where fixed price tendering for building contracts has been the case for a long time? To what extent will he extend this practice to other Departments in Scotland, and in England as well?

Mr. Buchan-Hepburn: As regards Government Departments in general, I only wish to say at this stage that if a good start is made I hope that the practice will be extended to other Departments.

Mr. Stokes: Why does the Minister suggest, as I understood his Answer, that there should any longer be any limit to the size of a fixed price tender? Is he aware that in the export market we all have to tender for fixed prices; why should we not have to do so at home?

Mr. Buchan-Hepburn: I hope that in due course we shall get back to that, but naturally I have had to take account of opinion in the industries concerned. This is a start and an experiment; there is no reason why it should not be extended as we go on.

Mr. McInnes: Does the Minister intend also to include in the tenders the appropriate penalty clauses?

Mr. Buchan-Hepburn: Yes, Sir; I think that will be the case. (15 May 1956.)

**Three-bedroom Houses (Average Cost).** In reply to a question the Minister of Housing and Local Government stated that the average cost of a three-bedroom house built in 1948 was £1,295 and the interest charges were £46 13s. 6d. The corresponding figures for a house built in 1955 were £1,442 and £76 0s. 7d. (18 May 1956.)

**AMENDMENT TO THE R.I.B.A. STANDARD FORM OF CONTRACT.** The following amendment to clause 19 of the R.I.B.A. Standard Form of Contract has been approved by the Joint Contracts Tribunal and ratified by the Councils of the R.I.B.A., the R.I.C.S. and the N.F.B.T.E.

The amendment is dated 18 April 1956.

## Determination by Employer

19.—(a) *Default.* If the Contractor shall make default in any of the following respects, viz.:—

(1) If without reasonable cause he wholly suspends the Works before completion.

(2) If he fails to proceed with the Works with reasonable diligence.

(3) If he refuses or persistently neglects to comply with a notice in writing from the Architect requiring him to remove defective work or improper materials and by such refusal or neglect the Works are materially affected,

and if he shall continue such default for fourteen days after a notice by registered post specifying the default has been given to him by the Architect, the Employer may, without prejudice to any other rights or remedies, thereupon and at latest within ten days by notice by registered post determine the employment of the Contractor under this contract; provided that notice in pursuance of this clause shall not be given unreasonably or vexatiously and shall be void if the Employer is at the time of the notice in breach of this contract.

(b) *Bankruptcy of Contractor.* In the event of the Contractor becoming bankrupt or making a composition or arrangement

with his creditors or being a company having a winding up order made or (except for purposes of reconstruction) a resolution for voluntary winding up passed or a receiver or manager of the company's business or undertaking duly appointed, or possession taken, by or on behalf of the holders of any debentures secured by a floating charge, of any property comprised in or subject to the floating charge, the employment of the Contractor under this contract is determined but the said employment may be reinstated and continued if the Contractor his trustee in bankruptcy or liquidator receiver or manager as the case may be shall so agree.

(c) In the event of the employment of the Contractor being determined and so long as it has not been reinstated and continued, the following shall be the respective rights and duties of the Employer and Contractor, viz.:—

(1) The Employer may employ and pay another contractor or other person or persons to carry out and complete the Works and he or they may enter upon the site and use all temporary buildings, plant, machinery, appliances, goods and materials thereon, and may purchase all materials necessary for the carrying out and completion of the Works.

(2) The Contractor shall, if so required by the Employer or Architect within fourteen days of any of the events referred to in sub-clause (b) of this Clause, assign to the Employer without further payment the benefit of any agreement for the supply of materials and/or for the execution of any works for the purposes of this contract but on the terms that a supplier or sub-contractor shall be entitled to make any reasonable objection to any further assignment thereof by the Employer and the Employer may pay the supplier or sub-contractor for any such materials supplied or works executed under such agreement (whether the same be assigned as aforesaid or not) before or after the said determination the amount due by such agreement in so far as it has not already been paid by the Contractor. The Employer's rights under this sub-clause are in addition to his rights to pay nominated Sub-Contractors as provided in clause 21(c) and payments under clause 21(c) or under this sub-clause may be made out of any retention monies in the hands of the Employer.

(3) The Contractor shall during the execution or after the completion of the Works under this sub-clause remove from the site as and when required, within such reasonable time as the Architect may in writing specify, any temporary buildings, plant, machinery, appliances, goods or materials belonging to or hired by him, and in default the Employer may (without being responsible for any loss or damage) remove and sell any such property of the Contractor, holding the proceeds less all costs incurred to the credit of the Contractor.

(4) Until after completion of the Works under this sub-clause by the Employer he



shall not be bound by any provision of this contract to make any further payment to the Contractor, but upon such completion as aforesaid and the verification within a reasonable time of the accounts therefor the Architect shall certify the amount of expenses properly incurred by the Employer and, if such amount added to the monies paid to the Contractor before such determination exceeds the total amount which would have been payable on due completion in accordance with this contract, the difference shall be a debt payable to the Employer by the Contractor; and if the said amount added to the said monies be less than the said total amount, the difference shall be a debt payable by the Employer to the Contractor.

(Note. The above amendment as printed is for inserting in the *Standard Form of Contract*.)

In the Form for use by Local Authorities sub-clause 19(a)(4) is retained together with sub-clause 19(d), and this point should be carefully noted in inserting the amendment in that Form. A slip containing sub-clause 19(a)(4) can be attached to clause 19.)

#### PROVISION OF EXPLANATORY DRAWINGS WITH BILLS OF QUANTITIES AT THE TIME OF TENDERING.

The Council has considered a recommendation from the Practice Committee resulting from a proposal originally put forward by the Joint Consultative Committee of Architects, Quantity Surveyors and Builders. This proposal was to the effect that a set of explanatory drawings should be supplied with bills of quantities at the time of tendering.

The point was made that these would result in closer tendering since it gave tenderers a better opportunity to assess the requirements of the work than could be obtained from a cursory examination of drawings in the architect's office.

The Council gave approval to this proposal in principle but in so doing emphasised that the drawings concerned were solely for the purpose of explaining the nature of the scheme and would not form part of the contract in any sense. The procedure would not be mandatory.

#### GUARANTEES FOR ASPHALT WORK.

A Joint Statement by The National Employers Federation of the Mastic Asphalt Industry and The Felt Roofing Contractors Advisory Board. The National Employers Federation of the Mastic Asphalt Industry and the Felt Roofing Contractors Advisory Board have recognised for some time that it is no longer normal practice in the building industry for specialist trades to issue guarantees, particularly as modern contract conditions in the R.I.B.A. and other Forms of Contract in common use lay down specific requirements as to periods and conditions relating to the Defects Liability of the Specialist contractor.

Long-term guarantees no doubt served

their useful purpose in the asphalt and built-up roofing industries in past days when these materials were untried and unproved, but such a basis for their well-established industries is now considered to be out-dated and unnecessary.

The National Employers Federation of the Mastic Asphalt Industry and the Felt Roofing Contractors Advisory Board have therefore decided to reduce the length of guarantee and also to issue a Form of Guarantee common to both bodies, and announce that as from the 1 July 1956 all their members will, on request, issue this guarantee covering a period of twelve months from the practical completion date of the main contract for Mastic Asphalt or Built-up Felt Roofing, Damp-coursing and Tanking and Asphalt Flooring against approved specifications. This one-year period will operate irrespective of the length of maintenance or defects liability period appropriate to the main contract.

Any guarantee already in being will of course continue without change.

Architects and other customers from their long experience of these two well-known waterproofing materials will appreciate that the amended period of guarantee does not in any way represent the true life of the materials.

#### LAW CASES

**Leedsford Ltd. v. Bradford Corporation.** Meaning of 'or other approved firm' in the bills of quantities. In this case there was an item in the bills of quantities reading 'Artificial Stone—the following to be obtained from the Empire Stone Co. Ltd. or other approved firm'.

The contractors wrote to the architect for his approval of firms other than the Empire Stone Co. for the supply of artificial stone. The architect replied that he was only prepared to approve the Empire Stone Co. as stated in the bills of quantities.

In the Court of Appeal it was submitted on behalf of the contractors that the item was inserted for their benefit, and if they were able to obtain approval of some firm who would supply artificial stone of proper quality at a less price than that at which the Empire Stone Co. would supply it, they were entitled to that benefit. By denying them that right the architect had broken the contract and they were entitled to damages assessed on the difference between the price quoted by the firms whose names they submitted for approval and the price paid to the Empire Stone Co. The words 'or other approved firm' ought to be read as giving the contractors the right of submitting names of suppliers of artificial stone for approval and that if they did so the approval should not be unreasonably withheld.

On the authority of a decision in the House of Lords in *Viscount Tredegar v. Harwood* (1929) the Court of Appeal held that the words 'or other approved firm' did not add anything to the rights of the contractors, and there was no obligation upon the architect to approve any firm suggested to him other than the Empire

Stone Co. (Court of Appeal, 1 March 1956.) (Reported in *THE NATIONAL BUILDER* for May 1956.)

**J. M. Wilkie v. Scottish Aviation Ltd.** Surveyor's claim for professional fees. In the *JOURNAL* for February this case was noted, being a claim for professional fees based on the R.I.C.S. Scale where nothing had been agreed between the parties as to the basis of remuneration.

The Court of Session in Scotland ruled that merely because surveyors have agreed among themselves what they would like to be paid does not give them a legal right so to be paid. Even if the practice of operating the Scale were proved to be well known, that did not require the Court necessarily to adopt it, for it had still to be established that the application of the Scale produced a reasonable result. A custom to be valid must be reasonable, and while the Court could take into account the Scale in fixing a proper figure, it was not necessarily bound to apply the Scale rigidly unless it was satisfied that the resulting fee was reasonable. (*THE ESTATES GAZETTE*, 19 May, 1956. The case is reported in the *LAW JOURNAL*.)

**Cator v. Lowe.** Damages for breach of repairing covenants. Sections 18 (1) of *Landlord and Tenant Act 1927*. This case is of interest as being the Court's interpretation of Section 18 (1) of the Act, which was as follows:—

The Judge said that the first half of Section 18 (1) of the *Landlord and Tenant Act 1927* said that damages for breach of covenants or agreements to keep or put premises in repair during the currency of the lease or to leave or put the premises in repair at the termination of the lease should not exceed the amount by which the value of the reversion was diminished. This meant that the damages were not to be assessed primarily by the cost of doing the repairs.

Further, the Act said that no damages could be recovered for a breach of covenant or agreement to leave or put the premises in repair at the termination of the lease if it was shown that the premises might be shortly pulled down or materially altered.

His Lordship said the second part of the Section did not refer to a covenant to keep the premises in repair during the currency of the lease. If proceedings were brought for damages for breach of the covenant during the currency of the lease, then the measure of damages was limited to the damage to the reversion irrespective of whether the premises were about to be pulled down or not.

This part of the Section, which prevented a defendant being called upon to pay damages, applied only to cases where the claim was for damages for failing to deliver up premises in good condition. (*THE ESTATES GAZETTE*, 26 May 1956.)



# Correspondence

## CLADDING OF BUILDINGS

*The Editor, R.I.B.A. Journal*

Dear Sir,—I have read with interest and appreciation Mr. Mills' paper on the Cladding of Buildings in the April JOURNAL. In view of the complex nature of this problem, it is impossible to give more than a review in an evening lecture and Mr. Mills is to be complimented on the amount of ground that he has managed to cover.

In such a summary it is of course not possible to give details in support of all the statements that are made, but for this very reason it is the more important to avoid statements that may be misleading to the less well informed. In my opinion some of the statements made regarding costs ought not to have been made or, if made, should not have been allowed to pass without some amplification during the discussion.

When dealing with the office building erected for the Aluminium Company of America, Mr. Mills states that the weight of the structural steel was reduced by half, owing to the use of aluminium cladding panels, and also suggests that savings approaching this proportion are fairly general. One would like to know with what form of construction the cladding is being compared. Surely the main loads on the structure are the applied loads together with the dead weight of the floors and the type of cladding does not affect these nor does it save weight in the glazed areas of the perimeter walls. The Aluminium Company of America appear to be trying to make the most in advertising value from a costly experiment.

Assume a strip of floor 1 ft. wide in a building 20 ft. deep to the centre line and take the very modest 'all-in' load of 125 lb. for the floor. This gives a total load on the strip of 2,500 lb. Against this we can save on the *one foot* of external walling by substituting cladding for walling up to sill height.

This saving might be 200–250 lb. with the lightest of claddings, or rather less than 10 per cent. It would seem that a saving of 10–15 per cent might be possible in a building with large glass areas and a little more as the glass areas are reduced. We do not however vary stanchions by half inches, when in concrete, and we cannot vary steel sizes if we wish to do so. The real saving on a normal building of reasonable dimensions must be quite small and in many cases may not offset the higher costs of the special cladding.

If taken seriously, a claim that 50 per cent reduction in load is possible, due to the use of lightweight cladding alone, is rather alarming. The newly qualified architect is likely to combine all the new techniques in a single building. If he can 'reduce the weight of the structural steel frame to half' by the use of aluminium cladding alone, and if he then makes the greater savings in weight that are possible by the use of prestressed concrete, lightweight aggregates and hollow partitions, it would

seem that there is some danger that his first masterpieces may become air-borne!

There is undoubtedly a great deal to be said for the lightweight claddings and probably as much for the modified use of more traditional materials, but I suggest that claims of relative costs are difficult to prove and better left out of the argument unless properly substantiated. At present it would seem that the only facts that could be generally stated with some degree of accuracy are that, relative to the intelligent use of traditional materials, lightweight claddings cannot reduce the cost of the glazed areas and are likely to increase considerably the cost of the solid walling, assuming reasonable fire resistance and thermal insulation are required.

I hope that this letter will not be considered too harsh comment on a very excellent article.

Yours faithfully,

ERIC S. BENSON [F]

Mr. Mills says: In reply to Mr. Benson's comments the architects and engineers for the Alcoa building provide the following information in support of the statement made in my paper.

'The Alcoa building contains 310,000 sq. ft. of rentable space above the first floor and required 6,500 tons of steel. A conventional skyscraper nearby, the Gulf building, with 304,000 sq. ft. of floor area, required 12,700 tons of structural steel. The external wall of the Alcoa building, which consists of an aluminium facing, a Perlite concrete back-up and furring and plaster, weighs 40 lb. per sq. ft. compared with the conventional cladding for an American skyscraper of 4 in. of limestone with 8 in. of brick back-up walling weighing 150 lb. per sq. ft. This difference of 110 lb. per sq. ft. over the 188,000 sq. ft. of external wall provides a saving of 10,340 tons of dead weight in the building. On a typical exterior column the load was reduced from 1,520 tons to 1,100 tons.'

The paper also refers to an office building in Cincinnati where external cladding of aluminium sheet weighed only 13 lb. per sq. ft. including insulation and internal facing with a U value of 0.118, the total wall being 6 in. thick. This can be compared with the stone-faced brick non-load-bearing walls of the Rockefeller building in New York, which weigh 155 lb. per sq. ft.—twelve times the weight of the building in Cincinnati.

In relation to the Alcoa building the complete wall was designed for wind loads of 34 lb. per sq. ft., has a four-hour fire rating and a U value of 0.14. Similar figures of weight reduction with high insulation value and fire resistance can be quoted for other cases and savings in cost by the provision of greater floor space due to the thinner walls, reduction in steel framing due to weight-saving, reduction in foundation size for a similar reason and speed of completion of the cladding can all be regarded as economies which result from the use of light-weight cladding.

It is appreciated that it is difficult to produce exact figures of comparison, but

the cases mentioned have been verified and others are referred to in the paper. Similar experiences in this country could be cited.

## NEW STREET STATION, BIRMINGHAM

SIR,—May I, through the medium of your correspondence column, express my interest in and my appreciation of the drawing of New Street station in Birmingham by Mr. E. B. Musman [F] which adorns the cover page of the March issue of the JOURNAL.

Mr. Musman must be well acquainted with this pre-eminent railway station in the Midland metropolis and particularly with the old L. & N.W.R. section with its original huge single span glass roof which, since the collapse of its contemporary at Charing Cross in the early years of the present century, enjoyed the reputation of being the largest in England of its kind.

With the equally well-known footbridge constituting a passenger and also a public thoroughfare spanning the complete width of the original Midland and London and North Western sections and linking two parts of the city, it was regarded as one of Birmingham's unique features.

Apart from the excellence of the technique of this superb sketch, the proportion, form and scale of the great roof has been—with its multiplicity of bracing and tie rods—indicated with remarkable skill. This skill is manifested in the sharp curve to the left of the lines as they enter the south tunnel, shown in its exact position and in high light, Mr. Musman not forgetting even the fact that at this point daylight penetrates—before the main tunnel is entered—between the intervening arch supporting the south end of the roof.

Unfortunately this outstanding example of structural engineering has since the last war been replaced by cantilevered glass canopies which cannot be invested with the dignity of the term 'roof' as they do not project beyond the edge of the platforms and have unfortunately disclosed to view the backs of buildings adjoining the station, from a higher level, which the large roof had happily screened. They are also incidentally in derogatory contrast to the still existing twin glass spans covering the old Midland section.

It was from the station (illustrated) that Webb's famous four coupled compound locomotives, of fifty years ago, hauled the equally famous two-hour expresses from Birmingham to London (Euston) and vice versa.

The train, so skilfully depicted by Mr. Musman, leaving No. 1 platform is no doubt the modern equivalent but is now—as clearly shown—hauled by a more powerful locomotive than Webb's late 'masterpieces' which, on one occasion, completed the journey in 1 hr. 48 mins.

In conclusion may I add that I am sure all Birmingham members of the R.I.B.A. will agree that this drawing manifests a dual skill in not only eliminating unnecessary detail and emphasising important features (even to the features of at least one passenger on No. 2 platform! also the two

home signals bracketed on the standard at the end of the platform—perfectly drawn) but in demonstrating a masterly co-ordination of aesthetic and technical values engendering our pride and admiration.

Yours faithfully,

A. L. ROGERS [L]

## Book Reviews

**Ten Books on Architecture**, by *Leone Battista Alberti*. Translated into Italian by *Cosimo Bartoli* and into English by *James Leoni*. 1755. [Facsimile reprint.] Edited by *Joseph Rykwert*. Tiranti. 1755. (1955). £1 15s.

'What can be the Reason that just at this time all Italy should be fired with a Kind of Emulation to put on quite a new Face?' We are fortunate in having a book by an eye-witness of the great events in the 15th century who is able both to summarise the notions of his time and—to some extent answering his own question—to suggest many of the solutions to the problems; solutions which found practical expression in his own work and in the architecture of those who followed him.

Alberti was born in 1404, an exile from Florence, so that when he was permitted to return home his eyes were astonished by the work of his contemporaries. Settling in Rome, he began to write a series of books on the theory of art and the art of living. This book on architecture is the first great treatise on that subject written in the modern world. It extracted the fruits of Roman learning from the 're-discovered' manuscripts of Vitruvius and brought an unusually brilliant mind to bear on aesthetics.

*De Re Aedificatoria* was finished in 1450, but was not printed until 1485, 13 years after Alberti's death. This is a facsimile of the third English edition, which was translated under the auspices of Lord Burlington by his protégé, Giacomo Leoni. The facsimile is edited by Joseph Rykwert, who appends many interesting notes to elucidate the text.

Running through the book we can trace four great themes:

(1) It is a treatise on the Platonic conception of proportion—proportion as a governing factor in the composition of the cosmos—thus one system of proportion governs the disposition of the universe, of man, animals and all nature, of music and all the arts. Art is defined by a scientific formula in contrast to the mediaeval conception. This theme is fully discussed in Book IX. Alberti clearly condemns passing fashion—'But there are some who . . . say that Men are guided by a Variety of Opinions in their Judgement of Beauty and of Buildings; and that the Forms of Structures must vary according to every Man's particular Taste and Fancy, and not be tied down by any Rules of Art. . . .' (Bk. VI. ii.)

(2) This is a treatise on the rationalisa-

tion of town planning. Alberti believed that the external appearance of buildings in a town was the responsibility of the public and not of private individuals. About 1447 he was called in by Nicholas V to advise on the great task of rebuilding Rome and produced tentative suggestions in *Descriptio Urbis Romae*.

(3) It is a treatise on the organisation of external space. For the first time since the days of Imperial Rome, a writer is aware of the finite qualities of the space surrounding buildings. Here he suggests what later Bramante was able to complete and put into practice on the Vatican.

(4) It is a statement on the professional status of the architect, his professional duties and his educational standard. In this book, as in *Della Pittura*, Alberti is concerned to raise the status of the arts. He decries the vanity of producing beautiful drawings and polished models which mislead the client. On training he maintains that 'the Arts which are useful, and indeed absolutely necessary to the Architect, are Painting and Mathematics'. An architect should not run and offer his services to a client.

Writing when printing was in its infancy, Alberti did not conceive a printed edition of this book. For that reason the original manuscripts have no illustrations. The pictures in this edition were engraved from Leoni's drawings, which were based, in the first place, upon the woodcuts in Cosimo Bartoli's Italian edition of 1550.

Careful reading will reveal much that is relevant to our own day, and may suggest avenues of approach which have been obscured by later writers, if we avoid what Koestler has called 'this half consciously patronising attitude in our admiration of the classics—"how clever of them to have known that at their age"—which becomes snobbery when "the frame of reference becomes more important than the work". The danger is greater when, as in this case, the book is nicely produced in facsimile and the very attractiveness of the type face may lull us into this attitude. But it is a most useful contribution, showing us Alberti the puritan many years before the Reformation, Alberti the prison reformer, the man who acknowledges the need for advertisement in commercial architecture, and who advocated cremation and the medicinal value of the right environment. It gives to a wider public a landmark in architectural theory, which had in this century been relegated by its size, expense and rarity, to the shelves of the specialist libraries.

J. QUENTIN HUGHES [L]

**Na-oorlogse Bouwkunst in Nederland**, by *J. P. Mieras*. (Maatschappij tot Bevordering der Bouwkunst.) 11½ in. 256 pp. incl. pls. and other illus. Amsterdam and Antwerp: Kosmos. [1954.] With summary of the text in English. £2 2s.

Picture books of post-war building, briefly annotated or merely captioned, are commonplace enough. This one from the Netherlands has several outstanding points

conspicuously lacking in the general run of such publications.

A reader with some knowledge of present-day Dutch architecture may accept the diversity of style and character shown as no more than a typical manifestation of that architecture. That view alone would however overlook much of the merit of this book, and a comparison with the same type of publication here will further demonstrate the essential catholicity of this Dutch example. The architectural press of this country tends to have its selected favourite architects whose work and opinions appear from week to week or month to month, and later may form the bulk of a bound volume, wherein tolerance and diversity will be noticeably absent, and which only represents the conviction and taste of its author and publisher. It is hardly likely that in such a volume would appear the works of, say, Gibberd, Lasdun, Erith, Richardson and the Smithsons. The fact that this does occur in this book may be confusing to the English reader but is nevertheless a very healthy sign.

This publication was bound to avoid sectarian narrowness, coming as it does under the auspices of a professional body, the B.N.A., of which the author is the Director as well as the Editor of its organ, the *BOUWKUNDIG WEEKBLAD*. Such a volume might be published here by the R.I.B.A., or perhaps the A.A., and by necessity would have to include all current viewpoints, thereby producing a far more representative picture of British architecture of the moment than is normally given in commercial publications. This is what Heer Mieras has done, giving his country and us a very valuable book.

Another point of divergence from the usual run of such books is the inclusion of a very well considered and knowledgeable treatise on a number of basic problems of present-day architecture, which occupies about a third of the pages. Each chapter is followed by a few examples seldom directly referred to in the text, thus leaving the reader to draw his own inference. An English summary translation is available, but unfortunately it is not very well done and is hard to follow without the original.

Most non-Dutch readers will be satisfied with the illustrations, from which a great deal may be learnt without the text. How telling, for example, are the juxtaposition of Oud's Villa at Katwijk and his B.I.M. offices in The Hague, Dudok's Hilversum Town Hall and his recent offices for the Foundry at IJmuiden. Of the less familiar post-war buildings, the impersonal purity of Heer A. Warner's houses in Noordwijk stand out, whilst Professor Peutz's Town Hall at Heerlen will give ample scope for speculation about the style of this highly individual architect.

If any conclusion about modern Dutch architecture can be easily drawn from this book it is that rugged individualism is still both the strength and weakness of Netherlands architects. Whilst this often rescues work from the dullness of competent mediocrity, the result of the war years of



inactivity has been to harden the core of thought within the already very diverse schools of architecture, and some of the fruit of this intellectual activity has been very strange indeed. On the other hand there is discernible a merging along the boundaries of the schools, except perhaps for the Delft school, and this is a hopeful sign that Netherlands architecture has consolidated its position in the last ten years and is now ready to move forward again. This book should help the choice of direction.

M. D. BEASLEY [A]

**The Victorian Home.** Some aspects of nineteenth-century taste and manners, by *Ralph Dutton*. 10½ in. x + 206 pp. incl. pls. and other illus. + front. Batsford. 1954. £1 10s.

An entertaining volume, easy to read, full of amusing information—not all of it completely accurate—with a number of illustrations from Victorian engravings, paintings and photographs.

Your reviewer very much enjoyed the book, but is compelled to admit that he would not have been prepared to buy it at thirty shillings, though he might have paid fifteen. The price is too great for holiday reading and the text is too superficial for the serious student of 19th-century architecture. One is left wondering what kind of reader the author and the publisher had in mind, for this volume is certainly not on a par with Whiffen's *Stuart and Early Georgian Churches* or Pilcher's *Regency Style*, brought out by the same publisher a few years ago at a very much lower price.

The production is good, and the illustrations include a charming coloured frontispiece taken from a painting by A. E. Emslie.

**Law and Practice of Building Contracts** including [that pertaining to] architects and surveyors, by *Donald Keating*. With a glossary of building terms by *Paul Badcock*. 8½ in. xlv + 349 pp. Sweet and Maxwell. 1955. £2 10s.

Initially the author seems unable to make up his mind whether he is directing his attention to the law of building for architects and surveyors or the practice of building for lawyers. Once his level of approach is settled, he develops his exposition with commendable conciseness and lucidity.

The work is predominantly legal and would very likely prove invaluable to Arbitrators and others concerned with building contracts, as a manual for easy reference.

After the main body of the text there is a brief commentary on the R.I.B.A. Forms of Contract, which would have been more useful if the distinctions between the forms for private use and those adapted for local authorities had been pinpointed.

Useful appendices include the R.I.B.A. Conditions of Engagement and Scale of Charges, and the Form of Sub-Contract

agreed between the N.F.B.T.E. and the F.A.S.S.

**An Introduction to Modern Architecture**, by *J. M. Richards*. (Pelican Books, A61.) Revised [3rd] ed. 7½ in. 182 pp. incl. illus. and 48 pls. and pp. of illus. Penguin Books. 1956. 2s. 6d.

First published sixteen years ago, reprinted often and revised twice, this Pelican is a splendid half-crown's worth. The bibliography, which contains frank, confident (and sometimes rash) comments on many of the books listed, is especially valuable.

**Robert Maillart**, by *Max Bill*. 8½ in. x 8½ in. 184 pp. incl. pls. and other illus. Zürich: Girsberger. 1955. (Sw. Fr. 35.)

Max Bill's excellent monograph on the Swiss engineer Robert Maillart (1872–1940), whose inspired handling of design in concrete earned him international (if largely posthumous) fame, has been revised and includes a little hitherto unpublished material.

As in the first edition, which appeared in 1949, the text throughout is in German, French and English.

## A.B.S. Annual General Meeting

THE ANNUAL GENERAL MEETING of the Architects' Benevolent Society was held in the rooms of the R.I.B.A. on 2 May. The President, Mr. C. H. Aslin, C.B.E., was in the Chair. The President of the Royal Institute of British Architects was elected President of the Society. The Honorary Officers, Vice-Presidents, Honorary Auditors and Council were elected for the year 1956–57.

The President, in moving the adoption of the Annual Report, Statement of Accounts and Balance Sheet, said: 'It is very encouraging to know that during the last year the Society has attracted more support from the profession, although it is not yet sufficient. If every member on the register contributed only 10s. a year we should have a reasonable and stable income. We feel sure that the increase during 1955 is largely due to the efforts of our local representatives throughout the country. The personal approach always produces the best results, and we are very grateful to all members who have taken so much trouble. I hope they will continue with the same enthusiasm, so that next year we may have an even better result.'

'You will have seen that we have again been generously helped by the organisers of the Building Exhibition, who sent us a donation of £650 as a result of the special admission tickets, and in addition they very kindly provided us with a stand to make our work known and to sell our Christmas cards in aid of our fund. The Montgomery family have always been very kind in the way they have supported the Society, and I am sure we thank them most generously.'

'Another generous gift, of a new kind to us, is the bungalow in Lancashire which has been bequeathed to the Society by the late Major Bluhm, together with its contents and a sum for maintenance. This is a very valuable acquisition, and it will very shortly be put in order, so that we may instal one of our beneficiaries in it.'

'Our own scheme for building homes for our old people has, as you may have noticed in the Press, gone forward during the last twelve months, and the result of the competition for their design has now been announced. I am sure you will all join me in congratulating Mr. Clifford Culpin on gaining the award, and we are now looking

forward to starting building as soon as possible. We shall of course need a great deal more money in order to pay for this, and I hope everyone will now do everything he can to contribute to the Centenary Fund, and to interest his friends.'

'I want to express our thanks to Mr. Frank Yerbury and the Building Centre for allowing the assessing and exhibition of the designs to take place there, and for the help given in making it known to the Press and the public. We would also like to thank the staff of the R.I.B.A. for all the assistance they gave in connection with the competition.'

'As a result of the announcements in the Press about the result of the competition, a friend of the Society has promised to subscribe £100 annually, under seven-year Contract, towards the building of the homes. It will be a wonderful encouragement if this example is followed by others, to a greater or less degree. We naturally want to have the whole scheme completed as soon as possible, so that our old people can occupy these charming little houses, so I ask you all to do your best to raise funds for this purpose.'

In the unavoidable absence of the Honorary Treasurer and Honorary Secretary, Mr. R. O. Foster, Honorary Auditor, presented the Annual Report, Statement of Accounts and Balance Sheet. He pointed out that the contributions received represented less than 5s. a head average for each architect on the register. It was only rarely that the Council could authorise a payment of more than £50 a year to an approved applicant. The Centenary Appeal Fund had increased, chiefly due to the magnificent contribution made by the A.B.S. Ball. The total amount given to this Fund up to the date of the meeting was approximately £23,500.

The Annual Report, Statement of Accounts and Balance Sheet were adopted. A vote of thanks was recorded to the Honorary Treasurer, Honorary Secretary and Honorary Auditors, and also the staff for their hard work during the year. Suggestions for obtaining more subscriptions were discussed, and it was agreed that these should be followed up by the Council and officers. The meeting closed with a vote of thanks to the President.

# Notes and Notices

## NOTICES

**Session 1955-1956. Minutes XII.** At the Eighth General Meeting of the Session 1955-1956 held on Tuesday 15 May 1956 at 6 p.m.

Mr. Kenneth M. B. Cross, M.A., Vice-President, in the Chair.

The meeting was attended by about 85 members and guests.

The Minutes of the One Hundred and Eighteenth Annual General Meeting held on Tuesday 1 May 1956 were taken as read, confirmed and signed as correct.

The following members attending for the first time since their election were formally admitted by the Chairman:—

*As Fellows:* R. D. Hammett, C. A. R. Norton.

*As Associates:* G. B. Baldwin, K. W. Barnes, D. F. Boyt, R. P. P. Broadway, D. C. Carpenter, T. G. L. Hamilton, W. D. Newton-Dawson, L. A. J. Robinson, M. E. Rutledge, D. L. Smith.

*As Licentiates:* K. M. Benbow, W. H. A. Johns, S. I. Porteus, F. J. Press, E. A. W. Tyrell, N. H. Ware.

Mr. Henry Morris, C.B.E., M.A.(Oxon.), M.A.(Cantab.) [Hon. A], having read a Paper on 'Architecture, Humanism and the Local Community', a discussion ensued and on the motion of Mr. J. Murray Easton [F], seconded by Mr. G. Grenfell Baines, A.M.T.P.I. [A], a vote of thanks was passed to Mr. Henry Morris by acclamation and was briefly responded to.

The proceedings closed at 7.05 p.m.

**Forms of Agreement for Use between a Building Owner and an Architect.** Members are reminded that, on the recommendation of the Practice Committee, the Council have approved the publication of Forms of Agreement in the four following editions:

- (i) *Form of Agreement for General Use between a Private Building Owner and an Architect or Firm of Architects;*
- (ii) *Form of Agreement for General Use between a Building Owner (being a Statutory Authority) and an Architect or a Firm of Architects;*
- (iii) *Form of Agreement between a Local Authority and a Firm of Architects for Housing Work;*
- (iv) *Form of Agreement between a Local Authority and a Firm of Architects for Multi-Storey Flats.*

In addition, on the recommendation of the Competitions Committee, the Council have approved a *Form of Agreement between the Promoters and a Firm of Architects appointed as the result of a Competition.*

The respective forms have been carefully designed to include all the essential points on which a clearly defined agreement between a building owner and an architect is needed, and to omit many irrelevant and repetitive clauses which, in the experience of the Institute, are so frequently inserted.

The five documents are now available in printed form, and may be obtained on application to the Secretary, R.I.B.A., 66 Portland Place, London, W.1 (price 6d. per copy, inclusive of purchase tax). Postage 3d.

**R.I.B.A. Distinction in Town Planning.** The R.I.B.A. Distinction in Town Planning is by conferment only, and is limited to Fellows, Associates and Licentiates of the R.I.B.A.

The Distinction is the highest award in Town and Country Planning that the R.I.B.A. can

bestow. It is solely intended for members of the R.I.B.A. who have made an outstanding contribution in the field of large-scale planning. Recommendations are submitted to the Council by a Standing Committee set up for the purpose.

Personal applications by candidates will not be entertained; the name of a candidate must be submitted by three sponsors, themselves members of the R.I.B.A., who will be required to submit the following particulars on behalf of the candidate:

- (a) Details of professional qualifications and experience;
- (b) Evidence of his work and experience, such evidence consisting of a list of the candidate's work, together with references to professional journals in which the works have been illustrated; and such other evidence as may assist the Committee in making their recommendation to the Council.

Nominations may be made twice a year on 1 March and 1 November, and should be addressed to the Secretary, Royal Institute of British Architects, 66 Portland Place, London, W.1.

Members upon whom the Distinction has been conferred will be entitled to use the designation 'R.I.B.A. Distinction in Town Planning', and it is advised that this should be used in full, or the initials 'R.I.B.A. Dist.T.P.' after the initials F.R.I.B.A., A.R.I.B.A. or L.R.I.B.A., according to the class of membership to which they belong.

**The R.I.B.A. Appointments Department.** Members and Students of the R.I.B.A. and the Allied Societies are reminded that the services of the Institute's Appointments Department are available to employers requiring assistants and to assistants seeking salaried employment.

Employers are invited to notify the Secretary of vacancies in their offices, giving details of the work to be done, the qualifications required, and salaries offered.

Assistants should preferably call at the offices of the Appointments Department, but if this is not practicable they should obtain from the Secretary an application form, which when completed and returned to the Institute will enable the Department either to send the applicants particulars of vacancies suitable to their qualifications and requirements or submit their names for vacant posts.

Members and Students seeking official appointments should note that normally these are fully advertised in the weekly professional press, and that therefore the Appointments Department do not as a rule notify them to those on the register.

The Institute will also be glad to advise on most matters concerning architectural employment, including overseas appointments.

**The Acceptance of Pupils and Junior Assistants and the Probationership of the R.I.B.A.** The Board of Architectural Education have noticed that the practice still persists of members accepting pupils or junior assistants without satisfying themselves that such pupils or junior assistants have reached the necessary standard of general education for the Probationership. Members are reminded that it is most important that they should not take boys or girls into their offices unless they possess one of the qualifications laid down.

A list of the recognised examinations can be obtained on application to the Secretary, R.I.B.A.

**Members and Professional Affixes.** The Council's attention has been called more than once to the practice among some members of adding a string of letters of doubtful value to the affix indicating membership of the Royal Institute on their letter paper.

This is a matter in which the Council obviously cannot dictate to members, and must trust to their good sense. It should be obvious, however, that the affix of a chartered body of high standing is weakened in effect by the addition to it of a string of other mysterious designations, some of which probably indicate no more than the payment of an annual subscription.

**Correspondence with the Institute.** In order to facilitate speedier attention to correspondence, and to relieve the staff of a great deal of research, it is particularly requested that members and Students will kindly state in all correspondence with the Institute the class of membership (F, A, L or Student) to which they belong.

**Shape and Sizes of Technical Literature.** Postcards for use by members asking manufacturers to produce technical literature in accordance with B.S. 1311: 1955 are available from the Secretary, R.I.B.A., on application.

**Luncheon and Tea Facilities for Members.** Members are reminded that there is a self-service dining room on the second floor of the R.I.B.A. building where luncheons are served between 12 noon and 2 p.m. on weekdays except Saturdays. The dining room is open to members and Students. There is a 'Club' licence and drinks can therefore be obtained with meals. Members may bring guests.

Morning coffee and afternoon teas have hitherto been served in the Members' Room on the first floor. Owing to the rebuilding programme the Members' Room has to be taken over for temporary office use and the service of coffee and teas will, during the period of rebuilding, be available on the second floor landing.

## BOARD OF ARCHITECTURAL EDUCATION

**R.I.B.A. Examination for the Office of Building Surveyor under Local Authorities.** At the R.I.B.A. Examination for the Office of Building Surveyor under Local Authorities held on 25, 26 and 27 April 1956 nine candidates presented themselves and the following were successful: Harold G. Coasby, Leslie Collins, John D. Lillywhite, Terence J. Loveless, Ivor Riley.

**R.I.B.A. Maintenance Scholarships in Architecture.** The R.I.B.A. offer for award in July 1956 the following maintenance scholarships in architecture, tenable from 1 October 1956:—

Three R.I.B.A. Houston maintenance scholarships of a maximum value of £125 per annum each. They are available for any stage of training at a recognised school of architecture, and are awarded in the first instance for one year. They are renewable from year to year. (The Houston maintenance scholarships are for the purpose of providing educational and maintenance allowances for the sons of architects and artists, who may be, or at the time of their death were, in impecunious circumstances, whether such architects or artists be alive or dead.)

THE BUILDER maintenance scholarship. This scholarship is of the value of £75 per annum and is tenable as an ordinary maintenance scholarship or as a 4th and 5th year maintenance scholarship.

The Hartley Hogarth maintenance scholarship to provide grants towards the fees for architectural study at a recognised school of architecture is available to any student or students who produce satisfactory evidence of having been resident in the Borough of Keighley for a period of 10 years prior to 1 October of the year in which the application is made. Its value will be that of the fees of the school of architecture selected.

An R.I.B.A. 4th and 5th year maintenance scholarship of £60 to enable a Student who has passed the Intermediate stage to complete an approved course at a school of architecture recognised for exemption from the R.I.B.A. Final Examination.

The scholarships are intended to enable promising students, whose parents or guardians have not the necessary means, to attend approved courses at the schools of architecture recognised for exemption from the R.I.B.A. examinations. Students already taking such a course are also eligible to apply for a scholarship. The scholarships are available only for students who are British by birth or naturalisation.

The value of the scholarship, up to the limits stated, will depend on the financial circumstances of the parents or guardians of the candidate. The parents or guardians will be required to furnish particulars on the proper form of their financial position.

Applications for the scholarships (in accordance with the regulations for applications) must be made to the Secretary to the Board of Architectural Education, R.I.B.A., 66 Portland Place, London, W.1. The closing date for the receipt of applications, duly completed, is 29 June 1956. The awards will be announced towards the end of July 1956.

**Prizes for Public and Secondary Schools.** The R.I.B.A. offers annually for competition between boys and girls of Public and Secondary Schools, prizes totalling 20 guineas in value for the encouragement of interest in architecture.

The competition is not open to those who have left school before the end of the summer term immediately preceding the closing date for entries.

(a) A prize will be given for the best original essay of not more than 1,000 words illustrated by sketches dealing with building or group of buildings with which the competitor is personally acquainted. It should be understood that the prize is not given for illustrations but for an illustrated essay. In any case no illustration may exceed foolscap size. The essays should indicate personal thought and judgment and should not be guide-book description of a building. The competitors should choose a building they like and should state their reasons for liking it.

(b) A prize will be awarded for the best sketches or scale drawings of a building or part of a building in pencil, ink or colour. The sketches or scale drawings must be drawn from the original. Copies of photographs or other illustrations are notmissible. If measured drawings of buildings are submitted they must be accompanied by a statement that the buildings have been measured and drawn by the competitor. The original survey notes made on the site, from which the drawings were made, must also be submitted with the finished drawings. The size of each sheet must not exceed 30 in. by 22 in. The quality of the building will be considered in awarding the

prize. The name and position of the building should be stated.

The work submitted in competition for these prizes should be sent flat, not rolled and not folded, to the Secretary R.I.B.A. by the *Headmaster or Headmistress of the competitor's school and not by the competitor.*

Drawings and essays must be signed by the competitor and the name and address of his or her school clearly stated, and must be accompanied by a declaration to the effect that the essay and/or drawings are his or her own unaided work. The competitor's age must also be stated.

The Jury consists of: the Chairman of the Board, Mr. Evelyn Freeth [A], Mr. R. W. Paine [A], Mr. Edwin M. Rice [F], Sir Hugh Casson [F], Critic.

For the competition in 1956 all work must be sent so as to reach the Secretary R.I.B.A. by 28 September 1956.

## COMPETITIONS

**New Technical College Buildings, Paisley, Scotland.** The Governors of the above College invite architects registered under the Architects (Registration) Acts and resident in Great Britain, Northern Ireland or the Republic of Ireland to submit in competition designs for new Technical College buildings in Paisley, Scotland.

Assessor: Professor R. Gardner-Medwin, M.T.P.I. [F].

Premiums: £1,500, £1,000, £500.

Last day for submitting designs: Noon on 27 March 1957.

Last day for questions: 3 September 1956.

Conditions may be obtained from Messrs. J. and A. Gardner, Clerks to the Governors, 3 County Place, Paisley, Renfrewshire.

Deposit: £2.

An applicant for the conditions must state his registration number or the number of the receipt issued to him by the Architects' Registration Council in respect of the admission fee.

**New National Opera House at Benelong Point, Sydney, Australia: International Competition.** The Government of the State of New South Wales invite architects who are members of their respective architectural institutes in any country in the world to submit designs in competition for a proposed National Opera House, to be erected on Benelong Point, Sydney, Australia.

Assessors: Professor H. I. Ashworth, M.A.(Arch.), F.R.A.I.A. [F], Sydney; Mr. Cobden Parks, F.R.A.I.A. [F], Sydney; Dr. J. L. Martin, M.A. [F], London; Mr. Eero Saarinen, A.I.A., Michigan, U.S.A.

Premiums: £A5,000, £A2,000, £A1,000.

Last day for despatching designs: 3 December 1956.

*Every intending competitor was required to register his name and address in writing with the Secretary of the Opera House Committee not later than 15 March 1956.*

**International Competition of Ideas Regarding the Surroundings of Cologne Cathedral.** The City of Cologne invites planners to submit in competition schemes for the redevelopment of the area surrounding Cologne Cathedral.

Assessors: Herr Kelter, Cologne; Herr Riphahn, Cologne; Professor Hillebrecht, Hanover; Herr Steiner, Zürich; Professor Weyres, Cologne; Professor Baader, Bonn; Herr Pecks, Cologne; Professor Leibbrand, Zürich; Herr Schüssler, Cologne; Dr. Adenauer, Cologne.

Premiums: 20,000 DM, 14,000 DM, 10,000 DM, 6,000 DM.

The City of Cologne will also purchase 5 entries at 2,000 DM each.

Last day for despatching designs: 12 noon, 31 August 1956.

Competitors may send their entries through the diplomatic representatives of the German Federal Republic. Entries arriving after 14 September will not be considered.

Conditions may be obtained on application to Städtebauplatz der Stadt Köln, Stadthaus, Gürzenichstrasse.

Deposit 100 DM.

**International Competition, Geneva.** The Department of Public Works for the Republic and Canton of Geneva are promoting an International Contest of Ideas for the layout of the Place des Nations and of the Approach to the Secretariat of the Palais des Nations in Geneva. Assessors: M. Jean Dutoit, Prof. Sir Patrick Abercrombie [F], M. Eugène Beaudouin, M. Jacques Carlu, M. Arnold Hocchel, M. Giulio Minoletti, M. Werner Moser. The Assessors will work in consultation with representatives of The European Office of the United Nations, The City of Geneva, The Chief of Police of Geneva, The Secretary General of the Department of Public Works. Premiums: 40,000 Swiss francs to be awarded to a maximum of 5 entries; 10,000 Swiss francs for the purchase of the premiated entry. Last day for the despatch of entries: 6 p.m., 15 April 1957.

Last day for questions: 15 August 1956. Conditions may be obtained on application to the Department of Public Works, 6, rue de l'Hôtel de Ville, Geneva.

Deposit: 50 Swiss francs, returnable if an entry is submitted.

The conditions of this competition have been approved by the I.U.A.

**International Competitions.** The following International Competition is at present being considered by the International Union of Architects, who are negotiating the conditions with the promoters.

Competition for a monument in New Delhi to commemorate the 2,500th anniversary of Buddha's Enlightenment.

Promoted by the Government of India.

In this case the Secretariat of the I.U.A. have examined the published conditions of the Competition and found them to be generally unsatisfactory and not in accordance with the standard regulations for International Competitions approved by UNESCO (R.I.B.A. Calendar, page 812) on the advice of the International Union of Architects. Member nations of the I.U.A. have accordingly been warned not to participate, but negotiations are taking place between the I.U.A. and the promoters with a view to bringing the published conditions into conformity with the standard regulations and a further note will be published as soon as the conditions are reported by the I.U.A. to be satisfactory.

## COMPETITION RESULT

**Community Centre Concert Hall, Port-of-Spain, Trinidad.**

1. Mr. Colin Laird [A].
2. Mr. O. G. Chase.
3. Messrs. Mence and Moore [A/L].

## ALLIED SOCIETIES

### Changes of Officers and Addresses

**Birmingham and Five Counties Architectural Association.** President, Herbert Jackson [F]. Joint Hon. Secretaries, Lieut.-Col. J. L. Osborne, M.B.E. [A], 95 Colmore Row,



Birmingham 3. B. V. James [A], 49 Frederick Road, Edgbaston, Birmingham 15.

*Devon and Cornwall Society of Architects.* President, C. F. J. Thurley [F]. *Exeter Branch:* Chairman, C. F. J. Thurley [F]. *Plymouth Branch:* Chairman, G. F. Spray [A]. *Truro Branch:* Chairman, A. Geoffrey Bazeley, M.B.E. [F].

*Essex, Cambridge and Hertfordshire Society of Architects.* President, Paul V. E. Mauger, M.T.P.I. [F]. *Cambridge Chapter:* Chairman, C. J. Bourne [A]. *Southend-on-Sea and District Chapter:* Chairman, J. M. Bion [L]. Hon. Secretary, D. P. Saunders [A], 31 Canonsleigh Crescent, Leigh-on-Sea, Essex.

*Hampshire and Isle of Wight Architectural Association.* President, Peter McG. Corsar [A]. Hon. Secretary, G. F. Gutteridge [A], 140 Lodge Road, Southampton. *Central Chapter:* Chairman, H. G. Hayter [L]. Hon. Secretary, Robert S. Shaw [A], 132A High Street, Southampton. *Eastern Chapter:* Chairman, R. Carter [F]. Hon. Secretary, H. I. Murgatroyd [A], 10 King's Terrace, Portsmouth. *Isle of Wight Chapter:* Chairman, J. Ingoldsby [A]. Hon. Secretary, no change. *Western Chapter:* Chairman, L. E. Gregory [F]. Hon. Secretary, no change.

*Liverpool Architectural Society.* President, L. W. M. Alexander [A], Midland Bank Chambers, 60 Castle Street, Liverpool 2.

*Oxford Society of Architects.* Chairman, Thomas Rayson [F].

*Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects.* President, A. W. Wilson [F]. *Bedfordshire Branch:* Chairman, A. R. Laing, M.C. [A]. *Northamptonshire Branch:* Chairman, P. J. H. Panter [A].

*Preston, Blackburn and District Society of Architects.* President, Tom Mellor [A]. Hon. Secretary, F. A. Hewitt [A], The Mount, Marshall's Brow, Penwortham, Preston, Lancs.

*South-Eastern Society of Architects. Kingston-upon-Thames District Chapter:* Hon. Secretary, D. A. G. Smith [A], 132 Caldbeck Avenue, Worcester Park, Surrey. *Tunbridge Wells District Chapter:* Hon. Secretary, N. A. E. Wyatt [L], 2 Castle Hill Road, Hastings, Sussex.

*West Yorkshire Society of Architects.* President, Norman H. Fowler [F]. Joint Hon. Secretaries, R. S. Shapley [F] and D. M. Jones [A]. *Bradford Branch:* Chairman, J. A. Robertshaw [A]. Hon. Secretary, Ernest Fairs [A], 19 West End Terrace, Norman Lane, Eccleshill, Bradford. *Harrogate Branch:* Chairman, M. B. Tetlow [A]. *Huddersfield Branch:* Chairman, Geoffrey A. Rowe [A]. Joint Hon. Secretary (in place of Mr. E. A. Johnson), P. R. Nash [A], 10 Cedar Mount, Huddersfield. *Wakefield Branch:* Chairman, W. T. C. Walker [A].

*Wilts and Dorset Society of Architects.* President, Oswald S. Brakspear [A].

*North Wales Architectural Society.* President, F. C. Roberts [F]. Hon. Secretary, G. Parry Davies [A], Gwynfa, Garth Road, Colwyn Bay, Denbighshire.

*South Wales Institute of Architects. Eastern (Newport) Branch.* Chairman, T. G. Price, M.C. [A].

*Royal Society of Ulster Architects.* President, J. D. McCutcheon [L].

*Institute of South African Architects.* President-in-Chief, J. J. O. Orpen [A].

**Berks, Bucks and Oxon Architectural Association. Annual General Meeting.** The Annual General Meeting of the Berks, Bucks and Oxon Architectural Association took place at the Catherine Wheel Hotel, Henley-on-Thames, on Saturday 28 April and was followed by a luncheon for members and their guests. The President of the Association, Mr. E. Steward Smith [F], was in the chair. Among the guests were the Mayor of Henley and Sir Lancelot Keay, K.B.E., Past-President R.I.B.A. and Chairman of Bracknell New Town Development Corporation.

Sir Lancelot, who with the Mayor responded to the toast of The Guests, said that a new town was a wonderful opportunity for trying out new ideas and Bracknell was among those which were setting the pace for the rest of the country. He also said he felt convinced this country could not carry on in a half-hearted way. If it were going to remain great it would have to do big things. The credit squeeze and other similar restrictions made it very difficult to be bold.

After lunch the party proceeded to Bracknell New Town, where the architectural staff, under Mr. E. A. Ferriby [F], Chief Architect, showed them round. They visited a factory, a school, a typical house, a block of flats and a local shopping centre and were particularly impressed by the lay-outs of the housing. After the tour the Development Corporation entertained the party to tea at the Corporation offices.

**Essex, Cambridge and Hertfordshire Society of Architects. Visit to Belgium.** A plane carrying 36 passengers left Southend airport on Saturday 12 May bound for Ostend. On board were members of the Essex, Cambridge and Hertfordshire Society of Architects who, with their wives, were travelling to meet their counterparts on the other side of the Channel.

The party was met by the Town Clerk of Ostend, his Deputy and a deputation of Belgian architects, who freely offered their services. Among the many buildings visited the new Kursaal with its magnificent concert hall and restaurant proved of great interest. The party visited Bruges on Sunday and returned home by air in the evening.

**Manchester Society of Architects. Annual Dinner.** The annual dinner of the Manchester Society of Architects was held at the Masonic Temple, Manchester, on Monday 14 May. Mr. Leonard C. Howitt M.T.P.I. [F], President, was in the chair. Members and guests were received by Mr. and Mrs. Howitt and by Mr. F. C. Saxon, O.B.E., M.C., F.R.I.C.S., Vice-President R.I.B.A., and Mrs. Saxon.

Among the principal guests were the Lord Mayor, Alderman T. Regan and the Lady Mayoress; Mr. S. D. Cleveland, F.M.A., Director of the City Art Gallery, and Mrs. Cleveland; Mr. John R. Gauld, A.R.C.A., President of the Manchester Academy of Fine Arts; the Reverend Eric Saxon, Rector of St. Ann's Church, and Rural Dean of the Cathedral Deanery, and Mrs. Saxon; the Principal Regional Officers of the Ministry of Health and of the Ministry of Housing and Local Government; Mr. D. A. C. A. Boyne, Executive Editor of the ARCHITECTS' JOURNAL, and the Presidents of a number of Allied Societies.

The President, Mr. Howitt, proposing the

toast of the R.I.B.A., pointed out that he was the first City Architect to occupy the presidency of the Society and that Manchester was one of the first local authorities to place the whole of its architectural work in the hands of a qualified architect. Responding, Mr. Saxon said he regarded the Allied Societies as the backbone of the R.I.B.A. The toast of the City of Manchester was proposed by Mr. Haydn W. Smith [A], who spoke of the history of the industrial revolution 'written in the city in its bricks and mortar' and of the fact that now two architectural schools and the College of Technology were providing the city with the means to meet the present building programmes. Alderman Regan in reply spoke of the variety of buildings he had seen in recent visits to Russia and the United States. The toast of The Guests was proposed by Mr. P. G. Fairhurst [F] and the Reverend Eric Saxon replied.

**Northern Architectural Association. Cumberland Branch. Annual Dinner-Dance.** The annual dinner-dance of the Cumberland Branch of the Northern Architectural Association was held in the Silver Grill, Carlisle, on Thursday 8 March. Mr. R. A. Stewart [A], Chairman of the Branch, was in the chair and he with Mrs. Stewart received the guests. The guests of honour were the Mayor and Mayoress of Carlisle, Alderman H. N. Sutcliffe, J.P., and Mrs. Sutcliffe; Professor W. B. Edwards [F], President of the Northern Architectural Association, and Mrs. Edwards; and Mr. A. S. Nixon, President of the Carlisle and District Association of Building Trades Employers, and Mrs. Nixon. Other representatives of the professions closely allied to architecture and of the building industry were also among the guests.

**The Royal Incorporation of Architects in Scotland. Annual Convention 1956.** The 39th Annual Convention of the Royal Incorporation of Architects in Scotland was held at the Atholl Palace Hotel, Pitlochry, on 25 and 26 May. At the Annual General Meeting, which was held during the afternoon of 25 May, Mr. William McCrea [F] was re-elected President for the Session 1956-57.

Prior to the Annual Dinner, members were the guests of the Dundee Institute of Architects at a cocktail party. At the dinner the toast of the Architectural Profession was proposed by Sir Garnet Wilson, D.L., LL.D., and responded to by Mr. C. H. Aslin, C.B.E., President R.I.B.A., and Mr. William McCrea. Among the guests were Sir George T. McGlashan, Convener of the County of Perth, and Lady McGlashan; The Rt. Hon. James A. Smart, D.L., J.P., Lord Provost of the City of Perth, and Mrs. Smart; Baillie and Mrs. Ironside, Pitlochry; Mr. D. L. Macintyre, V.C., C.B., Under-Secretary, Ministry of Works, Edinburgh, and Mrs. Macintyre; Lt.-Col. J. W. Dunn, O.B.E., T.D., F.R.I.C.S., Chairman of the Scottish Branch of the R.I.C.S. and Mrs. Dunn; Mr. James Leggat, President of the Scottish National Building Trades' Federation (Employers) and Mrs. Leggat; and Mr. C. D. Spragg, C.B.E., Secretary of the Royal Institute of British Architects. Also among the guests was a party of Danish architects, who were making a study tour of Scotland arranged by the R.I.A.S. Mr. T. H. Thoms [F], President of the Dundee Institute of Architects, proposed the toast of The Guests, to which Sheriff A. M. Prain replied. Mr. L. A. Rolland [L], Vice-President of the Dundee Institute of Architects, proposed the health of the Chairman.

On the following day, Saturday 26 May, there was a bus tour to Blair Castle and visits were paid to the Tummel Scheme of the

North of Scotland Hydro-Electric Board. The Convention closed with a visit to the Pitlochry Festival Theatre to see a production of 'Misalliance' by George Bernard Shaw.

**Edinburgh Architectural Association.** Notes on the 98th Session 1955-56. Two notable occasions from the programme of winter lectures were on 11 October when Mr. Eric Lyons [F], lectured on 'Speculative Building' and 15 November when Mr. Edward D. Mills [F] lectured on 'Modern Architecture in Industry.' The Association has addressed a memorandum to the Edinburgh Corporation objecting to the decision not to proceed with the projected East Princes Street Gardens bus and car garage and has sent a deputation to the Corporation criticising various points of its policy on tree felling, planting and landscape

design. Mr. J. R. McKay, R.S.A. [F], Past President of the Royal Incorporation of Architects in Scotland and of the Edinburgh Architectural Association, has presented a medal for competition among architectural students in the Association. It is to be competed for annually and is to be awarded for draughtsmanship.

## GENERAL NOTES

**R.I.B.A. Cricket Club.** The club's fixtures and results are as follows: Wednesday 23 May v. *The Vitruvians* at Elstree: R.I.B.A. won by 6 wickets. Wednesday 13 June v. *The Architectural Association* at Elstree: cancelled owing to rain. Future fixtures: Wednesday 15 August v. *R.I.C.S.* at Hinchley Wood. Wednesday 29 August v. *Club Cricket Conference* at

Wimbledon. Tuesday 11 September v. *Blue Circle C.C.* at Wimbledon. All matches begin at 11.30 a.m.

**R.I.B.A. Golfing Society. Spring Meeting.** The Society's Spring Meeting was this year held at Denham Golf Club on 10 May, in excellent weather. Twenty-two members were present.

In the morning the Sullivan Trophy was competed for, the winner being H. Cullerne Pratt [A] with a score of 82 less 9 = 73. The runner up was L. C. Lomas [F], County Architect, Worcestershire, with a score of 93 less 19 = 74. In the afternoon a four-ball bogey competition was played, the winners being Eric Firmin [F] and John Grey [F] with the excellent score of six up. The runners up were W. Douglas White [A] and J. W. McGregor [F]—four up.

## Notes from the Minutes of the Council

### MEETING HELD 1 MAY 1956

**Appointments of R.I.B.A. Representatives.** (a) *Code of Practice Committee on Roof Construction for Houses*—C. M. Vine [F]. (b) *Code of Practice Committee on Flues for larger Appliances in Buildings*—F. H. Heaven [A]. (c) *Conference on Installation of Domestic Solid Fuel Appliances convened by the Coal Utilization Council*—Clifford Culpin [F] and John Pinckheard [A]. (d) *R.I.B.A. Architecture Bronze Medal: Birmingham and Five Counties Architectural Association: R.I.B.A. Representative to serve on Jury to consider Award*—Leonard C. Howitt [F], President, Manchester Society of Architects. (e) *Joint Committee of Professional Institutions to negotiate Remuneration of part-time Lecturers for Local Education Authorities*—J. Kenneth Hicks [F].

**The Right Hon. Earl Attlee, K.G., O.M., C.H. [Hon. F].** The congratulations of the Council were conveyed to Earl Attlee [Hon. F] on the conferment by Her Majesty of the Order of the Garter.

**R.I.B.A. Award for Distinction in Town Planning.** The Council approved a recommendation that the R.I.B.A. Award for Distinction in Town Planning should be conferred upon Dr. J. Leslie Martin [F] and Mr. Peter Shephard [A].

**R.I.B.A. Architecture Bronze Medal: the York and East Yorkshire Architectural Society.** The Secretary reported that the Jury entrusted with considering the award of the R.I.B.A. Architecture Bronze Medal in the area of the York and East Yorkshire Architectural Society for the three-year period ending 31 December 1955 had made their award in favour of the Cecil Cinema, Kingston-upon-Hull, designed by J. P. Taylor, M.B.E. [F], in association with A. K. Bray [Student] and J. R. Hobson [A]. Formal approval was given to this award.

**John Nash Memorial.** It was agreed that the Royal Institute should collaborate with the St. Marylebone Society in arranging for an unveiling ceremony for the memorial bust of John Nash which is being placed in the portico of All Souls Church, Langham Place.

**Provision of Explanatory Drawings with Bills of Quantities at the Time of Tendering.** The Council considered a recommendation from the Practice Committee resulting from a proposal originally put forward by the Joint Consultative Committee of Architects, Quantity Surveyors

and Builders. This proposal was to the effect that a set of explanatory drawings should be supplied with Bills of Quantities at the time of tendering.

The point was made that these would result in closer tendering since it gave tenderers a better opportunity to assess requirements of the work than could be obtained from a cursory examination of drawings in the architect's office.

The Council gave approval to this proposal in principle but in so doing emphasised that the drawings concerned were solely for the purpose of explaining the nature of the scheme and would not form part of the contract in any sense.

**Amendment to Rules: The Devon and Cornwall Society of Architects.** Approval was given to an amendment to the rules of the Devon and Cornwall Society of Architects to make provision for the opinions of Student members to be expressed at meetings of Branches of the Society.

**The Royal Academy.** The congratulations of the Council were conveyed to Mr. Marshall Sisson [F] on his election as an Associate of the Royal Academy.

**Architectural Control under the Town and Country Planning Act 1947.** The Council gave approval to a report submitted by the Joint Committee composed of representatives of the Public Relations Committee and Town and Country Planning and Housing Committee and the salaried and Official Architects' Committee. The report presented a review of the working of the Act in regard to the operation of aesthetic controls. The Joint Committee came to the conclusion that the inadequacy and unpopularity of the controls was only a symptom of the wider failure of the planning machine to justify to public opinion the admitted inconvenience of its restrictions by the conspicuous success of its results, either in the field of creative reconstruction or in that of protection of the existing scene.

The following were mentioned as among the notable weaknesses of the existing system in these fields:

The Ministry of Housing and Local Government originally visualised as a constructive organisation has gradually been reduced to the role of administering the Planning and Housing Acts. Other departments of State have acquired too much power. The regional physical planning machinery has been similarly reduced. Local planning authorities have delegated their powers to officers without the appropriate qualifica-

tions to carry out the work. A number of activities whose effect on the landscape is decisive do not come under planning control, e.g. Agriculture, Public Utilities, Power Stations, etc.

At the local planning level, the report asserts that the key to more effective handling of architectural and landscape problems is to get the right men into the right jobs. In this connection architects are the men properly qualified to be employed in a capacity which should permit creative work as well as the routine of development control.

The Council gave approval to the following statement of the Royal Institute's policy:—

**A.** That all County Boroughs should employ an Architect as a chief Officer and that he should also be responsible for Town Planning.

**B.** That all large Boroughs and Urban Districts should employ an Architect, with local planning duties depending on the degree of delegation.

**C.** That in cases where County Planning Officers are not Architects, County Architects should advise Planning Committees on development control in small towns and in rural districts and villages, and should be adequately staffed to enable them to deal with broad problems of landscape as well as building.

The Council authorised the Joint Committee to continue with a study of methods whereby local authorities generally might be persuaded to put these principles into practice.

**Membership.** The following members were elected: as Fellows 7; as Associates 14.

**Students.** 21 Probationers were elected as Students.

**Applications for Election.** Applications for election were approved as follows: *Election 19 June 1956*—as Fellows 2; as Associates 94; as Licentiates 14. *Election 9 October 1956 (Overseas Candidates)*—as Fellow 1; as Associates 14.

**Application for Reinstatement.** The following application was approved: as Associate, Shiawax Cowasjee Pastakia.

**Resignation.** The following resignation was accepted with regret: Andrew George Christie [L].

**Application for Transfer to Retired Members' Class under Bye-law 15.** The following application was approved: Thomas William Ford.

**Obituary.** The Secretary reported with regret the death of the following members: Joseph Anderson Allan [F], John Ernest Kewell [F],

Major Hubert Christian Corlette, O.B.E. [Retd. F], Harry Garnham Watkins [Retd. F], Henry Walker Bullen [A], Miss Rosette Mary Edmunds [A], Hyla Edward Elkins [A], John Percival Hall [A], Victor James Sargison [A], Kenneth Barker [L], Richard Edgar Hackforth [L], Henry Llewellyn Jones [L], Captain Denis Walford Locke [L], Charles Henry Mead [Retd. L].

By resolution of the Council the sympathy and condolences of the Royal Institute have been conveyed to their relatives.

## Membership List

### ELECTION: 1 MAY 1956

The following candidates for membership were elected on 1 May 1956.

#### AS FELLOWS (7)

Bruer: Lionel Gregory [A 1931], Adelaide, South Australia.  
Griffin: Hastings Harrison Montague [A 1940], Hargeisa, Somaliland Protectorate, East Africa.  
Lee: Richard Edmund, A.A.Dipl. [A 1930], Hong Kong.  
Parry: Mervyn Henry, D.F.C. and Bar, A.F.C. [A 1946], Perth, Western Australia.  
Pollard: George Walter, Dip.T.P.(Edin.), A.M.T.P.I. [A 1937], Nairobi, Kenya.  
Powers: Frederic Walter [A 1934], Durban, Natal, S. Africa.  
Reekie: (Mrs.) Lorna Macleod (née McLay), Dipl.Arch. (Leeds) [A 1933], Bridgetown, Barbados, British West Indies.

#### AS ASSOCIATES (14)

Appleby: Henry Gordon, Sydney, N.S.W., Australia.  
Billimoria: Burjor Manchershah, Bombay, India.  
Deane: David Alexis, A.S.T.C.(Arch.), Sydney, N.S.W., Australia.  
Fitzhardinge: John Berkeley, M.B.E., E.D., Perth, Western Australia.  
Kerr: Peter James, B.Arch.(Sydney), Sydney, N.S.W., Australia.  
Kumawat: Liladhar Sahai, New Delhi, India.  
Kyada: Purushottam Ukabhai, Bombay, India.  
Mercer: David John, Dip.Arch.(Queensland), Brisbane, Queensland, Australia.  
Owen: John Edward, B.Arch.(Toronto), Toronto, Ontario, Canada.  
Page: Robert Charles Halliburton, B.Arch. (C.T.), Cape Town, S. Africa.  
Pansare: Keshav Janardan, Bombay, India.  
Rathod: Narandas Premji, Bombay, India.  
Saini: Balwant Singh, B.A.(Punjab), B.Arch. (Melbourne), Jullundur City, Punjab, India.  
Swaan: William Albertus, B.Arch.(Rand), Berea, Johannesburg, S. Africa.

## Obituaries

Manuel Nunes Castello [F] died on 4 January 1956, aged 77.

Mr. Castello served his articles with Mr. Lewis Solomon [F] and after a short period in private practice returned to him and in 1927 became a partner in the firm, today known as Lewis Solomon Son and Joseph. He retired from active partnership in 1949 but continued as consultant.

Among Mr. Castello's works were St. George's Court, Holborn, Bevis Marks House in the City, Jubilee House for Littlewood's in Oxford Street, blocks of flats including Fountain Court in Buckingham Palace Road, a synagogue at Dalston and a church at Pem-

bridge Villas, Bayswater, and a large number of other office, commercial and domestic buildings.

Clement John Picton [A] died on 1 January 1956, aged 66.

Mr. Picton qualified at University College, London, and practised at Letchworth, Herts. His work was mainly domestic and he designed country houses in Dorsetshire, Kent and Surrey, and alterations and additions to country houses in Surrey, Berkshire, Gloucestershire, Anglesey, Buckinghamshire, Sussex and Yorkshire. He also designed smaller houses in Letchworth, Knebworth and Brookman's Park.

Cecil Howard Lay [F] died on 6 February 1956, aged 70.

Mr. Lay was a Suffolk man. He was born in Aldringham and lived all his life in the county. He was educated at Queen Elizabeth School, Ipswich, after which he was articled to John S. Corder of Ipswich. In 1907 he went to London to the Architectural Association School and was elected Associate in 1912.

He began practice in Suffolk, and his buildings show a highly individual style. They include the Baptist chapel at Aldringham, the restoration of the roof of the Parish Church of St. Peter and St. Paul, Aldeburgh, 'Raids End', the house in Aldringham in which he himself lived for many years, and some town planning for Leiston. His two great loves however were painting and writing. He painted the Suffolk countryside in oils and water-colours, but perhaps his best-known works in the artistic field were his black and white drawings of the Suffolk windmills. His writings too dealt chiefly with the countryside and people he loved. He published a number of volumes of poetry besides writing for a number of literary periodicals—he first began to contribute 'Nature Notes' to the local paper when he was serving his articles. He was active in the cause of bird protection and his last fight, which he waged in the Press, was against the deliberate spreading of myxomatosis among rabbits. He was also an antiquary with considerable knowledge of old churches, old pictures, china, glass and furniture.

Lindsay Cramp Dawkins [A], of the firm of F. Kenneth Milne, Dawkins & Boehm, Adelaide, South Australia, died on 13 September 1955, aged only 48.

Mr. Dawkins was a B.E., Adelaide University, and was elected Associate in 1933. He practised in London from 1930 to 1938 and in Adelaide from 1939 onwards. Among his works are the Australia and New Zealand Bank Ltd., Hindmarsh, and the Congregational Church and civic centre, Loxton, South Australia, the Lady Gowrie pre-school centre and an ambulance centre for St. John's Council. He was a lecturer in Town Planning at the South Australia School of Mines.

Sidney Richard Smith [L] died on 19 December 1955, aged 67.

Mr. Smith was articled to Messrs. Coles, architects, of Norwood in south-east London and remained with them until he joined up in 1914. He became a Staff Sergeant in the R.E. construction group, serving in the Dardanelles and on the Somme, and was mentioned in despatches. On his return to civilian life he spent various periods as assistant; at one time he was with Coudson and Purley Urban District Council working on council housing schemes and at another with Messrs. Vigers working on the Masonic Hospital, Chelsea. With the coming of the slump in 1931 he turned

to quantity surveying with Messrs. John Mowlems and continued to work for them until his death.

Rees Phillips [F] died on 26 December 1955, aged 66.

Mr. Phillips studied at the Architectural Association School of Architecture and was articled to Mr. A. Saxon Snell [F], whose partner he was from 1921 to 1941. From 1941 he practised alone until joined by his son, Mr. P. R. Rees Phillips [A], who now carries on the practice.

Mr. Phillips specialised in the design of hospitals, sanatoria and medical centres and the list of those for which he was responsible, both alone and in partnership, is a long one. It included Brompton Hospital, London, and a complete hospital centre of 1,300 beds at Ashgate, near Chesterfield. In 1945 he was invited by the Colonial Office to advise on hospital development in Nyasaland and Uganda, and submitted designs for a number of medical centres, but they were not proceeded with owing to lack of funds. In 1948 he won a limited competition for a European hospital in Bombay, which was erected under his direction and in collaboration with a Bombay firm of architects.

Mr. Phillips was a Fellow of the Royal Sanitary Institute, had served on its Council, lectured there and acted as examiner for some years. He served on the Social Committee of the R.I.B.A. during the inter-war years and since 1952 had served on the Hospital Committee.

A former business associate who knew Mr. Phillips for more than 30 years writes: 'To those who knew Rees Phillips it is clear that it was not by chance that he became engaged primarily in hospital design in all its aspects. No less than by professional knowledge and skill, he was by temperament and outlook suited for, indeed impelled towards, this specialised sphere of the profession. To a high degree he had the all-important faculty of being able to visualise a scheme, large or small, in its final form, completely integrated.'

'But possibly the quality which won Rees Phillips the highest respect from all with whom he had contact was the utter fairness of all his business dealings and decisions. Of undaunted courage in face of adversities and disappointments, his inspiring personality and quiet voice would bring help and confidence in situations of doubt and difficulty. We who knew him have our affectionate memories of Rees Phillips—of his subtle humour and discrimination of taste and outlook, strength and integrity of intellect, and above all of his warm heart and loyalty, and his constant thought and care for the problems and misfortunes of others.'

'Personal success as such was surely never his concern, and it is likely that he would have made his own very individual mark in any calling; to the present writer it is not too much to say that he was the epitome of all that is best in the professional man. Rees Phillips' memory lives so long as those who knew him have memory—of goodness, kindness, truth and skill. For the sake of human kind it is profoundly to be hoped that we shall see his like again.'

John Sowerby Milner [Retd. A] died on 24 January, aged 66, at his farm in the North Transvaal, South Africa. Mr. Milner retired in 1949. He had taken up farming with great success, growing citrus, oil nuts and gum trees for pit props, and taking an active part in the life of the local community. He began his career at the Exeter School of Art and was elected Associate in 1922.



# Members' Column

*This column is reserved for notices of changes of address, partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained*

## APPOINTMENTS

**Mr. Henry Kendall, O.B.E., M.T.P.I. [F]**, has been appointed Planning Consultant to the Government of Zanzibar on his impending retirement from the Colonial Service. Mr. Kendall is now in Zanzibar and will remain there until the end of October.

**Mr. C. F. Manning [A]** has been appointed staff architect to Boxgrove Houses Limited, 10 Duke Street, Manchester Square, London, W.1, where he will be glad to receive trade literature.

**Mr. R. E. Rowlett [A]** has been appointed an architect in the New South Wales public service. His address is c/o Government Architect's Branch, Department of Public Works, Bridge and Phillip Streets, Sydney, N.S.W., Australia, and he will be pleased to receive trade catalogues.

**Mr. Gordon Steele [A]** has been appointed Regional Technical Information Officer, Ministry of Works, Cambridge. His address will be Block A, Brooklands Avenue, Cambridge (telephone 58911).

**Mr. Kenneth C. Twist [A]** resigned his post as Chief Assistant Architect, Hertfordshire County Council, on 21 April and is now Superintendent Architect—Schools, Public Works Department, P.O. Box 136, Accra, Gold Coast, where he will be pleased to receive trade literature.

## PRACTICES AND PARTNERSHIPS

**Messrs. J. M. Austin-Smith & Partner [A/A]** of 29 Sackville Street, London, W.1, have taken into partnership **Mr. P. J. Lord [A]** and **Mr. Geoffrey Salmon [A]**. The practice will be carried on under the title of **J. M. Austin-Smith & Partners**.

**Messrs. Brazier & Hartington [A/L]** of 21 Market Street, Altrincham, have taken over the practice of the late John Ernest Kewell [F]. The practice will continue as a branch office of Brazier & Hartington at 163 Ashley Road, Hale, Cheshire.

**Mr. John Breakwell [A]** has taken into partnership **Mr. W. H. Davies**. The name and address of the firm will remain as previously—John Breakwell, 10 Hill Street, St. Helier, Jersey, C.I.

**Mr. G. B. Deolalikar [F]** has begun private practice at Brahmapuri, Baroda, India, and will be glad to receive trade catalogues, etc., at that address.

**Mr. Basil Gillinson [A]** has taken into partnership **Mr. Clifford Barnett [A]**. The practice will continue at 8 Queen Square, Leeds 2, under the style of **Gillinson and Barnett**.

**Mr. G. Hines, A.R.I.C.S. [L]**, has retired from his position as Senior Regional Architect to the Ministry of Housing and Local Government and will now practise from his address at 56 Grange Park, West Monkseaton, Whitley Bay.

**Mr. F. H. Lancaster [A]** has begun practice at 10 Stonegate, York (York 54296), where he will be pleased to receive trade catalogues, etc.

**Mr. Laurence King [F]**, practising at 9 Gower Street, London, W.C.1, has taken into partnership his chief assistant, **Mr. Ian Picken [A]**. The title of the firm will be **Laurence King**.

**Mr. David Mawson [A]** has joined **Mr. Bernard M. Feilden [A]** of Pulls Ferry, The Lower Close, Norwich, as an associate, and will be pleased to receive trade catalogues and samples. The name of the practice remains unaltered.

**Mr. Leonard Netts [A]** has begun private practice in association with **Mr. A. Shaw Waring [A]** at 36 Jesmond Road, Newcastle upon Tyne.

**Messrs. Robert Potter & Richard Hare [F/A]** of De Vaux House, Salisbury, have taken into association **Mr. Jeffery Ashenden [A]** and **Mr. Douglas Tennant [A]**. The title of the firm will remain unchanged.

**Mr. Geoffrey Twibill [A]** has been practising at 8 Bridge Street, Sydney, New South Wales, Australia, since November 1955.

## CHANGES OF ADDRESS

**Mr. J. S. Baldwin [L]** (Messrs. MacIvor & Baldwin) has moved his office, and his address now is: Chapter Surveyor's Office, Boley Hill, Rochester (Chatham 2469).

**Mr. S. J. F. F. Bassett [L]** has moved to 'Chipperfield', Rosemead Drive, Oadby, nr. Leicester, Leicestershire.

The private address of **Mr. A. W. Betts [A]** of Messrs. W. V. Betts and Son of Nottingham is now 'Greenways', Queen's Drive, Skegness, Lincs. (Skegness 1660).

**Messrs. Bradshaw Gass & Hope [F/A/A]** of 19 Silverwell Street, Bolton, have opened a branch office at 125 Constitution Street, Leith, Edinburgh 6, and will be pleased to receive trade catalogues, technical literature, samples, etc.

**Mr. G. Owen Butcher [A]** has changed his address to 8 Frank Woolley Road, Tonbridge, Kent.

**Mr. John G. Capon [A]** has been appointed Architect, Bulawayo District, and his address is now Federal Department of Public Works, P.O. Box 561, Bulawayo, Southern Rhodesia (Bulawayo 60612).

**Messrs. Chilton, Waters & Stutchbury [A]** of Loxfield Chambers, Uckfield, have opened a second office at Friar's Walk, Lewes, where they will be pleased to receive catalogues.

**Mr. Herbert J. Davies [F]** has changed his address from St. Albans, Herts, to 17 Normandy Lane, East Preston, Littlehampton, Sussex (Rustington 539).

**Messrs. Louis de Soissons, Peacock, Hodges, Robertson & Fraser [F/A]** have moved their Plymouth office to 19 Portland Villas (Plymouth 67981). They have also opened a new office at 12 Baring Crescent, Exeter (Exeter 58226).

**Mr. F. H. Ford [A]** has changed his address to 102 Harbenden Road, Wanstead, E.12 (WANstead 7497).

**Mr. Langton T. Foster [A]** has opened a branch office at 23a Queen Victoria Street, Reading (Reading 55291), and will be pleased to receive trade catalogues, etc.

**Mr. S. F. Gibbs [L]** has changed his private address to 63 Hollies Avenue, West Byfleet, Surrey.

**Mr. Michael E. Gooch [A]** and **Mrs. Sheila M. Gooch [A]** have changed their address to 34a Bracondale, Norwich.

**Mr. J. Granger-Taylor [A]** has changed his office address to 6 Fitzroy Square, W.1.

**Messrs. Stewart Kaye & Poole [A/A]** have changed their address to 60 Castle Street, Edinburgh 2. The telephone number remains unchanged (CENTRAL 5625).

**Mr. Leslie H. Kemp, M.R.A.I.C. [F]**, has opened an office at 16 Queen Street North,

Kitchener, Ontario, in addition to his office at 32 Wellington Street, Brentford, Ontario. He would be pleased to meet any fellow-members visiting Canada and to receive literature from any English firms represented in Canada.

**Mr. James F. McLean [A]** has changed his address to c/o 15A Constant Spring Road, Halfwaytree P.O., St. Andrew, Jamaica, B.W.I.

**Mr. Guy H. Nicholls [L]** has changed his address from Wigmore Street, London, to Needles Hall Farm, Brackley Hatch, nr. Brackley, Northants (Syresham 239).

The address of **Mr. John K. Robinson [A]** is now c/o F.P.W.D. H.Q., Lagos, Nigeria, British West Africa.

**Mr. C. J. Scott [A]** is now at Glyn Cothi House, Nantgaredig, Carmar. (Nantgaredig 227).

**Mr. St. John P. Stimson [A]** is now at 5 Seymour Street, Leicester.

**Mr. Brian S. Tait [A]** has moved his office to 19 College Green, Gloucester (Gloucester 23346).

## PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Fellow seeking retirement has small practice on the south coast for disposal. Willing to continue interest to initiate successor. Box 41, c/o Secretary R.I.B.A.

Associate at present on leave in England desires to purchase partnership or small practice, preferably in the south of England, but not essential. Box 43, c/o Secretary R.I.B.A.

Associate with growing practice in South Lincolnshire seeks amalgamation with established firm of architects. Box 44, c/o Secretary R.I.B.A.

Partnership available in South London. Well-established practice. Box 45, c/o Secretary R.I.B.A.

Fellow, widely experienced in the design and supervision of all types of building work, seeks partnership or position leading thereto, with an established firm in South Wales, preferably near Cardiff. Car owner. Some capital available. Box 46, c/o Secretary R.I.B.A.

Associate (31) seeks junior partnership or position leading thereto. Good all-round experience, car owner, some capital available. Box 47, c/o Secretary R.I.B.A.

## MISCELLANEOUS

**Mr. P. H. Warwick, M.T.P.I. [L]**, will retire in September from his post as City Engineer and Surveyor of Winchester.

*The Royal Institute of British Architects, as a body, is not responsible for statements made or opinions expressed in the JOURNAL.*

## PERSONAL LIABILITIES

'I beg your pardon'—'I am so sorry'—these are everyday expressions. Usually our apology is accepted; we were negligent, but it was a small matter and soon forgotten.

Today may be different. You hesitate as you cross the road, a car skids and the driver is killed. Apologies won't help you now. If the Courts decide you are negligent the damages must be paid.

The remedy is a Personal Liability Insurance Policy. A yearly premium of 10/- gives an indemnity (any one accident) of £10,000 plus legal costs. All the members of the family are included, and pedal cycling risks are covered.

Proposal form from The Secretary, A.B.S. Insurance Agency Ltd., 66 Portland Place, London, W.1.

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